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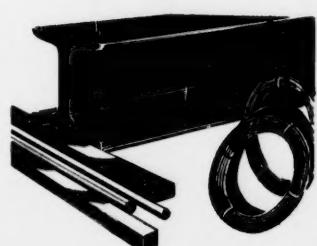
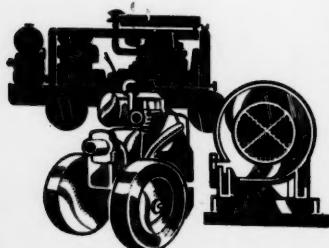
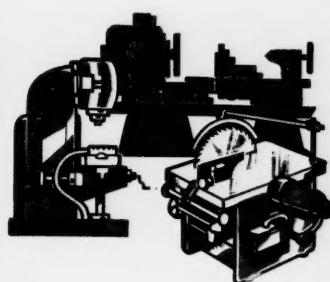
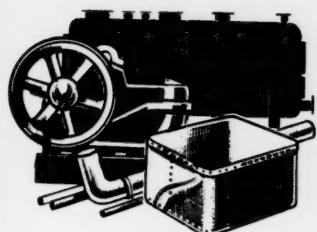
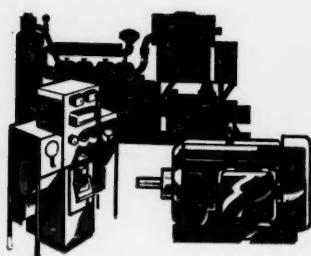
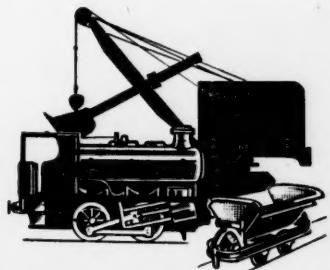
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Vol. CCXL No. 6143

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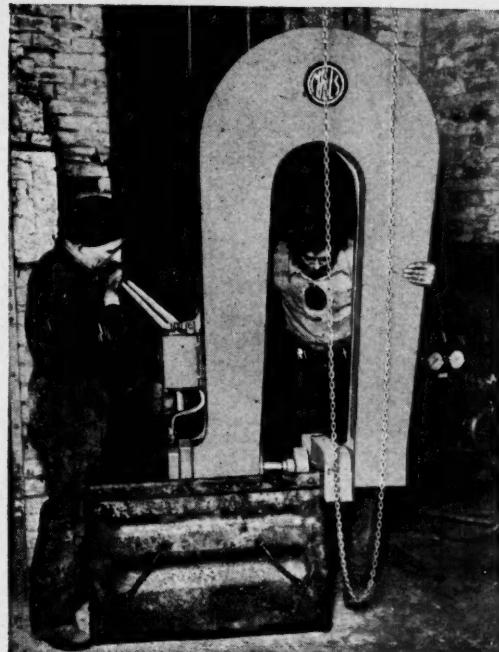
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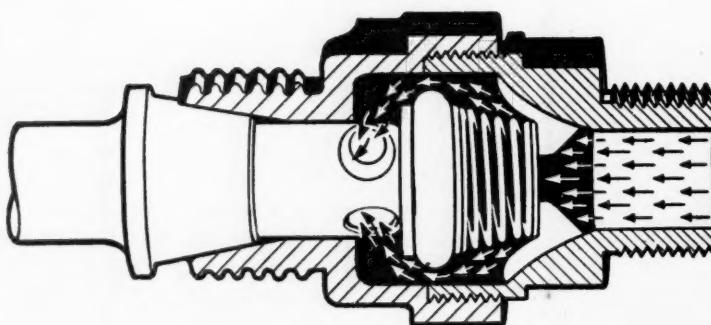
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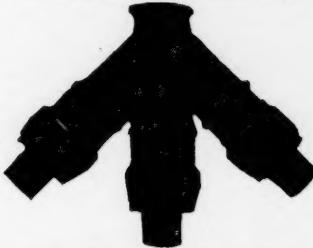
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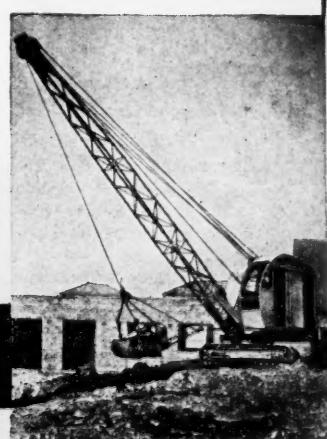
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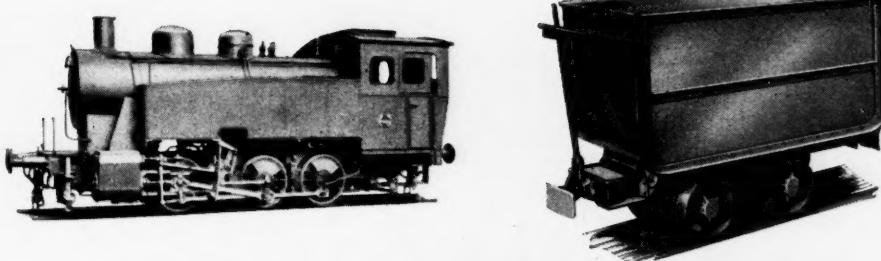
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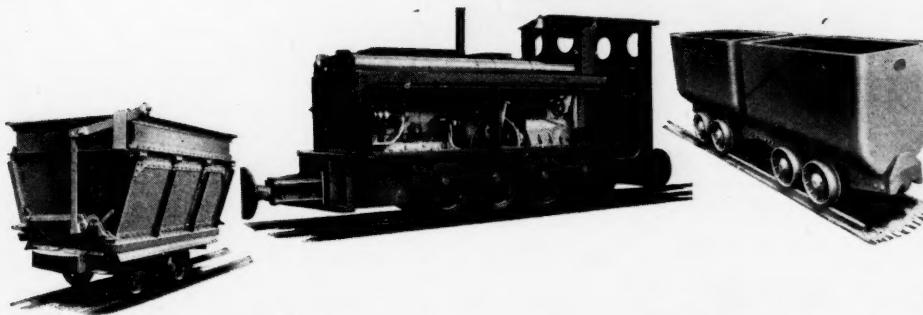
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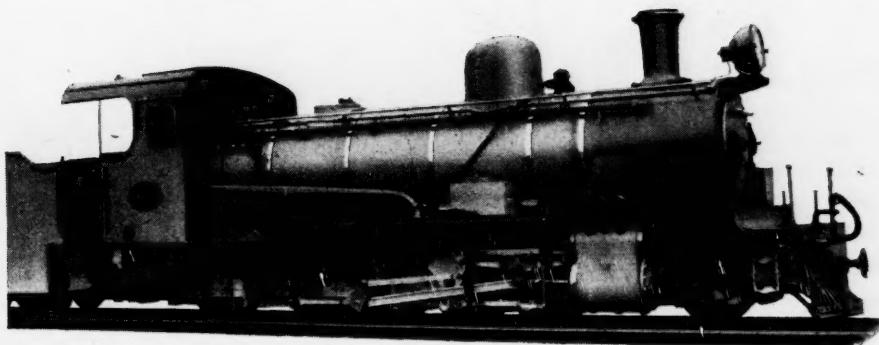
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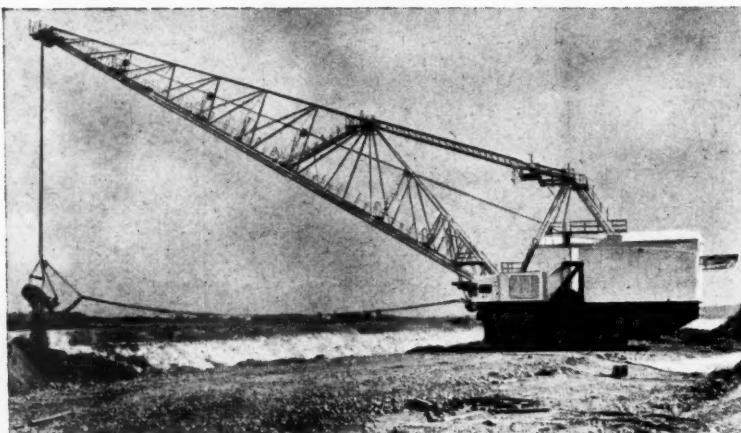
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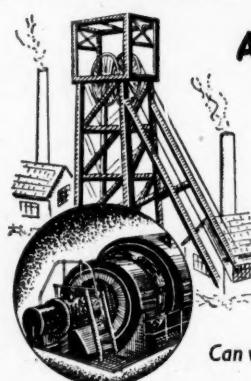
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CONTENTS

Notes and Comments	571	Company News and Views	585
From Our South African Correspondent	573	East Champ d'Or's limited mining area ; Government Areas and the Kimberley Reef ; Randfontein and uranium ; Progressive work at Freddie's North ; Freddie's South Results ; Durban Deep and the Kimberley Reef ; Nigel Gold to prospect for uranium ; T.C.L.'s higher income ; Marlu's Brighter Outlook ; Rand and O.F.S. Mine Returns for April.	
Modern Construction Practice at the New Broken Hill Consolidated Mine, Australia	574	Company Shorts	587
Laboratory for Uranium Recovery Research	575	Company Meeting	588
Nickel - Cobalt Discovery in Cuba	576	The Straits Trading Co. Ltd.	
Annual Dinner of the Institution of Mining and Metallurgy Correspondence	577		
Machinery and Equipment	578		
Metals, Minerals and Alloys	579		
The Mining Markets	580		
Rand and O.F.S. March Quarterly Results	582		
	583		

Published by The Mining Journal Ltd. at 15 Wilson Street, Moorgate, London, E.C.2. MONarch 2567 Subscription £2 per annum

NOTES AND COMMENTS

Tin Prospects

The speech of the Managing Director of the Straits Trading Company, Mr. E. M. F. Fergusson, which will be found at length in another column of this issue, is always something of an event in the annals of tin mining. As usual he concerns himself mainly with the broad aspects of the conditions in the industry and his conclusions may be regarded as generally reassuring. With the experience of the last two months present in our minds during which the market declined from some £950 to £700 per ton a balanced and realistic view is none too easy. For generations in the language of the Cornish miner a tin "bal" is either a fest or a famine, though even he would have been startled at the rapidity and extent of the fluctuations we have experienced since February, 1951, with its record of £1,615 per ton. In the last week or two there has been a sharp rebound from the declivities experienced in the previous few weeks but the evidences available do not permit us to form an opinion as to whether the rise has reached its limit or no. Influences eccentric to the ordinary course of trade are generally accepted as the reasons for the recent fluctuations. The chief depressant was the possibility of a fundamental change in Russian policy leading to a relaxation in international tension and in the urgency of armament preparations. Since then this hope has been seen as a more distant prospect even on the assumption that it is well-grounded. Apart from the second thought the other main market stimulant has been the great uncertainty regarding Communist policy in South East Asia, due to the activities of the Communist forces in Indo-China, and the menace it suggests to the present set-up in Siam with its obvious consequences for Malaya should the advance be sustained. Though the security position in Malaya and the Straits is obviously much improved, the establishment of a Communist regime in Bangkok would change the outlook radically.

Mr. Fergusson is probably justified in his conclusion that the existence of the extraordinarily high level of tin prices in the last two or three years not having resulted in any increase in world output affords strong evidence that the upward limit of tin production has been reached but it seems less certain whether we can count on any major gain in consumption. There seems bound to be some increase in

the United States but whether this will offset economy of use and substitution will have to be shown by experience—a spokesman for the American Can Company stated recently that the average coating per base box of tinplate had been reduced from 1.21 lb. to .598 last year, and tinplate is a major avenue of consumption in the industry. The efforts on which the International Tin Study Group are now engaged to promote a renewal of international tin control are a development which cannot of course be ignored, but in view of the uncertainties and long time which must elapse for any scheme to come into effective operation Mr. Fergusson's general conclusion that, given no abnormal developments, the long-term outlook for tin appears to give little reason for disquiet, seems the true line of thought.

Steering the Ship of State

The arresting speech which Sir Winston Churchill, as Acting Foreign Secretary delivered in the House of Commons on Monday must serve as a sobering background to all the Commonwealth celebrations and rejoicings with which Her Majesty Queen Elizabeth II's forthcoming coronation is increasingly associated. Foreign politics are becoming an increasing preoccupation and background for all our multitudinous problems and controversies and for the course of markets in almost all spheres of national life.

The Prime Minister's review centred primarily on the possibility of some *rapprochement* between the new rulers at the Kremlin and the Western world. Were this possible other serious problems would be greatly lightened and might, in the course of time, be eliminated. His speech, which in some ways reminds us of his Fulton address—from which dates the realization in the United States of the dangers which Russian policy under Stalin involved for the Western world and to the realization of the need for rearmament so long as that menace continued—was a call for earnest effort to sound out the intentions of M. Malenkov and his associates as to the possibility of exploring every possibility of ending the disastrous progress towards "tearing the human race to bits."

He advocated an intimate conference between the smallest number of leading powers at the highest level to explore the position. At the worst, he said, more intimate

contacts between the participants would have been established, and at the best, the assurance of a generation of peace. What reception this call to realism will receive either in the Kremlin or in Washington we do not yet know but our readers will recall that first reactions in the United States to the Fulton speech were definitely unfavourable, if not hostile.

Fortunately Sir Winston Churchill found himself able to characterize the position in Indo-China with the present withdrawal of the Communist forces from Laos as less serious than had been formerly assumed. This, of course, would involve diminished danger of Communist domination spreading to Siam, Burma, and ultimately Malaya, apprehension regarding which has no doubt been one of the influences contributing to the rapid alteration of prices in the tin market.

The position in the Middle East has taken on increased anxiety recently by the intransigence of the Egyptian dictator General Neguib, and his military *Junta*. While it would be satisfactory if we could regard this as one more illustration of the policy of "twisting the lion's tail," incitements to throw the British out of Egypt always involve the danger that General Neguib and his party may find themselves committed to a position from which it is difficult to retreat. Even if we should be forced to defend ourselves in the Canal zone, which with 80,000 men supplied by all the resources of a great base, should not be too difficult, there would still be possibilities of serious dislocation in canal traffic which would be liable to affect shipments of oil and other minerals from the east, to say nothing of the intensification of hostile relations developing between Israel and the Mussulman states of the Middle East and increased exacerbation of relations between France and her predominantly Mussulman populations in North Africa.

Nor is it only in the sphere of the Foreign Office that undesirable complications are present. The results of the recent elections in South Africa seem to have intensified rather than assuaged political tension. The last week or two has seen the emergence of several fissile movements in the Union which must tend, for the time being, at any rate, to increase political tension and cause unrest and uncertainty, notoriously inimical to the orderly development of business.

The debate last week in the House of Commons on the Rhodesia and Nyassaland Federation Bill was notable for the forthright declaration by Mr. Gordon Walker, who was Secretary of State for Commonwealth Relations in the late Government, of the view taken, at any rate by the Labour Party, of a determination to resist any attempt by Dr. Malan to effect any transfer of the native protectorates, Swaziland, Basutoland and Bechuanaland, to South Africa without prior consultation with the white and the coloured inhabitants and without the consent of Parliament. He pointed out that any request for transfer would put a very great strain on the relations between the two countries.

Sir Arthur Salter Gives a Glimpse of the Obvious

Among the speeches at last week's Annual Dinner of The Institute of Mining and Metallurgy (a report of which appears on page 577) that of Sir Arthur Salter, the Minister of Materials, must have been something of a disappointment to those of his audience who had not already resigned themselves to the Government of the day, whatever its complexion, turning a consistently blind eye to the clear signals put out by the British Mining Industry, both domestic and overseas.

On the question of stimulating private mining enterprise, Sir Arthur began encouragingly enough by stressing the United Kingdom's dependence on imported raw materials and the subsequent importance of stimulating British mining enterprise all over the world. He did not

think that this was primarily a Government task but rather that it was one for private industry suitably encouraged by Government policy.

Having accepted this premise it was therefore a disappointment that in turning to the question of stimulating mining production in this country—surely the most certain way of saving hard currency—the Minister was able to do no more than point to the acknowledged lag existing between the work of the Geological Survey—in itself, if we may say so, an exceedingly long-term project—and its conversion into practical mining operations. "Was there," he asked, "anything that, within the limits that must constrain them, the Government could do to narrow the gap between various surveys and the exploitation by private enterprise?" Having earlier in his remarks referred by implication to the work of the Westwood Committee, it was difficult to accept this as the naive question which it seemed and we, for our part, were regrettfully left to conclude that the industry, in this country at least, can expect to receive no energetic support from Whitehall.

Should this conclusion be unwarranted, however, and if the Government really desires to be told once again what are the necessary prerequisites for stimulating the British mining industry, both at home and overseas, this is as good a moment to do so as any.

Broadly speaking, the industry requests no better treatment than is accorded to mining by most of the other Commonwealth Governments, nor do we seek to minimise in any way the benefits which the industry will derive from the recent budget in general, and in particular from the 40 per cent initial depreciation allowance, which is in effect not a tax relief but merely a re-distribution of tax liability over a number of years while in the aggregate remaining substantially unchanged.

There are, however, two specific types of relief which the Government might reasonably be expected to grant, having regard in the first place to the quite exceptionally speculative nature of the industry and secondly, to the importance to the Exchequer in the case of the home industry of the potential saving in imports, and in the case of the overseas industry of the value of its invisible imports earnings and the revival of the City of London as the world centre of mining finance, to say nothing of the strength which British mining machinery manufacturers would thereby gain in the export market.

The first type of relief involves the principle, recognized in S. Africa and elsewhere, that mining companies shall be allowed to write off their initial capital expenditure out of earnings before being subjected to the full impact of taxation. The second category of relief accepts the principle that an active mine is a wasting asset and that some form of tax relief in the form of a depletion allowance is no more than a just recognition that mineral wealth is not regenerative.

The record of British mining throughout the world over the past century leaves no doubt either as to the essential spirit of enterprise with which it has been conducted or the very vital part which it has played in the rapid economic development of territories, both inside and outside the Empire, or (what perhaps is of even greater significance in the immediate present) its contribution to our balance of payments position. The change in this picture, which has occurred during and since the war, is well illustrated by the fact that since 1939 not even a single mining company has been registered in Great Britain for the purpose of overseas mining as compared with the five years prior to the war during which over £100,000,000 was raised in London for companies directed and financed from the City.

If the spirit of enterprise is to-day seemingly absent it may therefore fairly be deduced (not that the vigour of those directing the industry is in any way diminished), that

the game is no longer worth the candle, at any rate under the aegis of contemporary British Government. If Sir Arthur Salter and his colleagues wish it otherwise they have the remedy in their own hands. London is even to-day outstandingly well equipped to serve as the financial centre of a world industry and metalliferous mining in Great Britain itself, while it will never be on a large scale, has in its power to make a very much bigger contribution to the raw materials supply of British industry than it is making to-day. The consummation of both these eminently desirable ends lie almost entirely in the realm of fiscal reform.

South Africa

(From Our Own Correspondent)

Johannesburg, May 1.

The past month has seen a number of interesting developments in the mining world here. The most significant from the long-term point of view is the expansion of the uranium recovery undertaking to bring within its scope a number of smaller mines, which will feed slimes to the plants on major mines. The leaching plant at Stilfontein is to be enlarged as well as that at Randfontein to bring this about, and it would not be surprising if further developments along this line are announced before long.

STILFONTEIN EXTENDS LEACHING PLANT

The Stilfontein project is a particularly interesting one, as it is to treat the residues from the new Ellaton G.M., which is expected to be in production towards the end of this year, and from three old mines in the Klerksdorp area—New Klerksdorp, Babrosc and Afrikander Lease. The announcement regarding Ellaton came as no surprise as it will exploit the Vaal Reef, which is known to be a uranium carrier. The other three, however, mine reefs of the Government series. Up till now, the plans to recover uranium have revolved about the reefs lying above the Main Reef, and this is the first indication that it exists in payable quantities in other horizons.

As can be realized this has aroused a great deal of interest in mining and financial circles, and the question is now being put, whether uranium may not exist in the reefs of other series. No official confirmation is forthcoming, but it is understood that the presence of radioactive minerals has been established in some reef horizons in the Pietersburg area in the Transvaal series.

Reverting to the Stilfontein scheme, the three old mines are well within the category of marginal producers—New Klerksdorp for example, returning a monthly profit of little over £1,000—and the continued upward trend of working costs has been a matter of deep concern for a long time past. The extra revenue from uranium will make a major difference to their profitability and their lives before long.

RANDFONTEIN TO TREAT SLIMES

The announcement that Randfontein Estates was to undertake the treatment of slimes from its neighbour, East Champ d'Or, had been anticipated for some time past. East Champ currently mills around 30,000 tons a month. Up to the present, this has been largely drawn from the Main and South Reefs, which do not carry economic uranium values. Some time ago development was done on the Bird Reef, but no payable gold values were disclosed so the work was suspended. It is this last reef, however, that carries uranium on the West Rand. This raises the problem of what the ultimate balance will be between earnings from gold and uranium, for it is clear that, unless East Champ is able to increase its milling rate the grade must

fall in proportion with the amount of Bird Reef substituted for the higher grade Main and South Reef ore.

It would appear that this is going to be a problem on certain of the West Rand mines. When the first announcement of uranium production being undertaken was made, the possibility of some decline in profits from gold mining was mentioned. The Stock Exchanges took little notice of it at the time and during the recent upward movement in "U" stocks in recent months. It has, however, been sharply brought home to them by the report of West Rand Consolidated for the second quarter of uranium operations. During the first three months of uranium recovery, the total working profit was £526,000, of which £125,000 came from uranium sales. The second quarter showed a net working profit of only £465,000, although uranium profits had increased to £138,000. There may be some other explanation, but the natural deduction is that the recovery grade on the gold mining side has dropped sharply with the increased tonnage of Bird Reef milled. This is confirmed to a certain extent by the latest available figures which show a grade of 2.821 dwt. compared with over 3 dwt. a year ago.

So far as Randfontein is concerned, this position can be overcome, provided sufficient labour is obtained, as it has been milling well under capacity for a long time. Luipaards Vlei have suggested that grade may be adversely affected when its "U" plant comes into operation, but this may not be too great, as the old reduction plant is being reconditioned to handle additional tonnage.

So far as can be judged on the information available, this particular problem will be limited to the mines on the West Rand. The Kimberley Reef, which is the uranium bearing orebody on the East Rand, where it is mined, is payable on its gold content alone, for example, at Daggafontein which, incidentally, started its plant up at the end of March. In the case of those producers on the Far West Rand and the Free State, all residues will be passed through the leaching plant, so that earnings from uranium recovery will be a straight addition to gold mining profits.

WAR AGAINST SECURITY

A further shot has been fired in the war against the stringent security surrounding information dealing with every aspect of uranium recovery. The Atomic Energy Act, as it stands, makes it a serious offence to make mention of this topic without specific authority from the chairman of the Atomic Energy Board. This has been relaxed insofar as previously authorized information is concerned. During the recent session of Parliament a Member criticized this state of affairs and he has been followed by the President of the Johannesburg Stock Exchange in a recent speech where he said that so far as technical details of the extraction process were concerned, secrecy should be preserved, but when it came to questions of tonnages, costs, and ore reserves, the need was not so apparent particularly as prospectuses issued in other countries contained these details. The present secrecy could prove a fruitful field for unscrupulous company promoters and share pushers.

Work has now started on a new mine in the Klerksdorp area—Hartebeestfontein G.M.—lying immediately to the south of Stilfontein. An interesting feature is a revolutionary design in headgears, which will be made of concrete. Broadly speaking, they will be a continuation of the shaft linings. In appearance they will look more like the condensing towers of a large electric power station than the conventional headgear. It is anticipated that their use will cut both capital costs and the time required to erect permanent headgears. Shaft sinking has now been stopped at a depth of 100 ft. in the two shafts and an immediate start made with the headgears. It is expected that full-scale sinking will be started on both shafts by the middle of this year.

Modern Construction Practice at the New Broken Hill Consolidated Mine, Australia

By J. W. MORRIS

In the following article, the modern construction and design utilized in the haulage and service shafts at the New Broken Hill Consolidated mine are described, and it is indicated that the whole effect was planned to stand in keeping with the surface workings of the Zinc Corporation. The author gives sketches of construction dimensions and production flow, and shows how safety equipment has been incorporated as an integral part of shaft construction.

When the Zinc Corporation of Broken Hill decided in 1936 to extend its mining activities by opening the New Broken Hill Consolidated mine, it pressed into service all its resources of more than half a century of successful mining practice to make the new property of Broken Hill one of the most modern in the world. The preliminary stages provided for the development of a mine for a distance of 3,000 ft. along the strike on the line of lode and to be worked to a depth of 3,200 ft. below the surface. In an effort to maintain administrative efficiency, the Zinc Corporation decided that the N.B.H.C. would operate under separate mining leases, and in this regard planned to build modern offices and surface workings to ensure that the new mine stood in keeping with the efficient and modern surface buildings of the Zinc Corporation. It was decided also that the new property should have its own haulage and service shafts, but that these shafts would only develop and service all working below 2,600 ft. The existing haulage and service shafts were considered capable of transporting all payable ore on other levels.

A PRACTICAL PLAN

Such a production plan was practicable because the two mines adjoined each other and fast underground skip transport provided adequate haulage for silver-lead ore worked from levels above 2,600 ft. in both mines.

For the first eight years until production commenced in 1944 preliminary work of diamond drilling and shaft sinking occupied the entire technical and underground staffs, and to-day development is still continuing while the mine produces nearly 200,000 tons of payable ore annually.

Shaft sinking, as the most important development on a new mine, shows expert knowledge to be needed in design and size for the accommodation of skips and to fulfil an important role in ventilation.

With this in mind mining engineers at the new property have departed from the usual ellipse type of shaft and are using a circular shaft, which gives greater ventilation and permits larger cages to be hauled from all levels.

Digging, stripping and lining a modern mine shaft

demands expert knowledge on the part of the miner, and generally four pairs of men working air drill machines drill horizontal pin holes at regular intervals to support concreting forms, and at other regular spacings they cut small chambers into the side of the shaft to provide temporary ladderways, landings and housing chambers for water pumps and electrical installations.

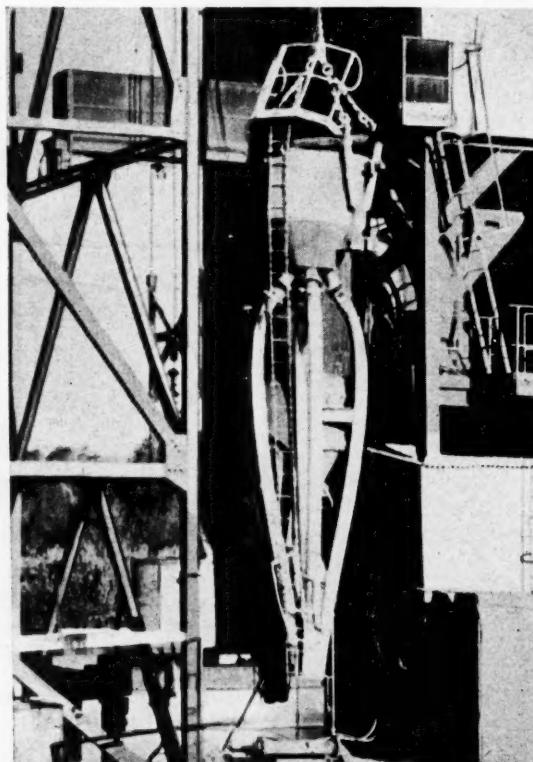
Concreting the shaft is highly mechanized at the New Broken Hill Consolidated, and is performed by the use of a mining "octopus," or a mechanical concrete mixer and pourer, which is lowered into the shaft and pours concrete through four 12 in. tentacles into the wooden forms which line the shaft.

MODERNITY WITH SAFE CONSTRUCTION

The new service shaft is a 20 ft. circle, and is now sunk to a depth of 3,400 ft. It is lined by 12 in. of concrete and will carry 10 ton skips and 100-man cages with upper and lower decks. The haulage shaft is 13 ft. 6 in. in diameter. Cages and self dumping skips are hauled by 700 h.p. electric motors at 1,800 ft. per minute. The flywheels of the Ward Leonard Ilgner winders which operate the cages and self dumping skips weigh 20 tons each. Platemen are in charge of cages at all levels, and signals are relayed to the winder driver by bell systems.

Safety cages are used exclusively on the new property, and by the new modern methods utilized it is impossible for the cage to overrun the top or fall to the bottom of the shaft. Special foolproof releases, which immediately go into action when the weight leaves the hauling rope or when the cage overruns its top limit, ensure the maximum safety for men and materials. Regular tests are carried out by dropping the cage or forcing it to its limit so that all safety devices are brought into action.

The new winding house at N.B.H.C. is sturdily built and is situated 170 ft. from the head frame over the main shaft. It is claimed the most modern of its kind in mining practice. In this instance, N.B.H.C. has departed from usual standards by constructing all-steel head frames on its haulage and service shafts. It is believed that steel head frames will reduce vibration in winding.

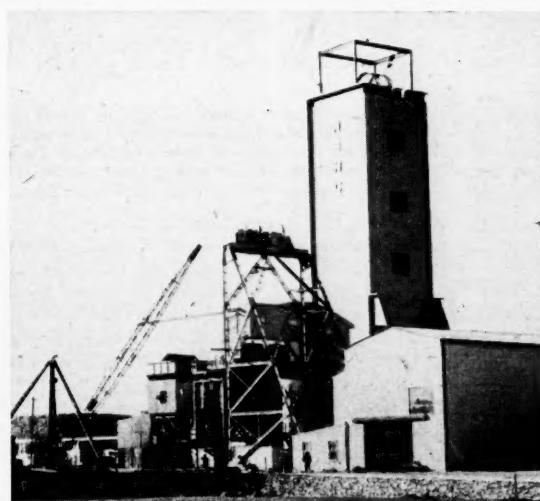


The combined concrete mixer and pourer

An indication of the traffic in the main shaft and the amount of work required of head frame and winding motors is revealed in the main shaft of the Zinc Corporation, which measures 27 ft. 6 in. by 13 ft. ellipse. The shaft has been designed to carry the following traffic simultaneously to the 19th level (2,920 ft.): Two cage compartments 11 ft. 5 in. x 6 ft. 3½ in.; two skip compartments 5 ft. 6 in. square; ventilation compartment 5 ft. 6 in. x 5 ft. 1½ in.; pipe compartment 5 ft. 1½ in. x 2 ft. 6 in.; ladderway compartment 5 ft. 1½ in. x 2 ft. 6 in.

Underground working is fully mechanized, compressed air car loaders fill 38 cu. ft. Granby type trucks which hold

2 tons of ore and the skips are hauled by 4-ton Mancha battery locomotives using Edison cells. From the 13th level downward ore transport is by side-tipping Granby trucks which empty into ore passes and the ore is fed by



The Headframe for the Haulage Shaft

gravity into the surface hauling skips. It is then automatically dumped into the main crushing mill built near the main head frame, and is conveyed by belt to the concentrate mill where it is treated by selective flotation. The concentrate is railed 400 miles to the large smelting works at Port Pirie, South Australia, where it is smelted into ingots.

For the year ended 1951, Consolidated Zinc of London, the parent body of the Zinc Corporation and New Broken Hill Consolidated, made a group profit of more than £E7,000,000, a profit which is expected to be further increased once the new property is in full production. An estimated cost to

date to establish the New Broken Hill Consolidated exceeds £A10,000,000 but with current zinc-lead prices the newly-established mine should soon repay all outlay and add further to Australia's national economy.

Laboratory for Uranium Recovery Research

A new laboratory with the primary objective of the development and improvement of processes for the recovery of uranium from its ores has been placed in full operation at Winchester, Massachusetts, by the American Cyanamid Company of New York. The new laboratory, which is being operated by the company for the Raw Materials Division of the U.S. Atomic Energy Commission, is well equipped for studying all phases of mineral dressing. One of its functions will be to undertake the important task of developing methods for effective and economical recovery of uranium from low-grade ores and other low-grade uranium bearing materials.

HISTORY OF THE LABORATORY

The laboratory was first started at another location in 1945 and was under the direction of Dr. A. M. Gaudin, professor of mineral engineering of the Massachusetts Institute of Technology. At that time, M.I.T. operated the facility for the A.E.C. and built up the staff to a total of about 60. During this period the laboratory made a number of extremely valuable contributions to process development for uranium recovery. As the demand for uranium increased, the scope of the operations of the laboratory became broader and eventually resembled the development function of regular commercial metallurgical testing facilities. Thereupon, M.I.T. decided it should no longer carry on the operation of the laboratory since it involved work more of a commercial nature than that normally handled by an academic institution. Consequently, in 1950, the American Cyanamid Company was awarded the contract to operate the facility.

For many years the American Cyanamid Company has operated a large mineral dressing laboratory at its Stamford (Connecticut) Research Laboratories where ore samples from all over the world are analysed and processes for extracting metals and minerals from them are developed.

The facilities at the new Winchester laboratory are capable of conducting tests utilizing all the accepted methods for the concentration and chemical treatment of ores. New techniques and equipment specially designed for the problems of extracting uranium are a feature of this installation. Ore samples from uranium fields throughout the world are sent to the laboratory in Winchester by the Atomic Energy Commission. Sometimes the samples may involve very small quantities and range up to samples comprising several carloads.

Basically, the operations of the laboratory are parallel to those of a commercial metallurgical processing mill. The experience gained is dispersed to producing units, which put the processes into effect at installations located on or near the sites of uranium bearing ores. The Winchester laboratory, the staff of which now comprises about 80 people and is expected to increase to 100, starts with the ore and carries it through to the end product, which is a uranium concentrate of acceptable grade and composition. In addition, field parties of laboratory engineers frequently are sent to plants in America and in other countries so that they may give technical advice concerning processes which have been developed.

SPREADING TECHNICAL KNOWLEDGE

An example of this work was the recent erection of a small producing unit and analytical laboratory at Grand Junction, Colorado, which is staffed with Winchester personnel. The whole operation is the result of a process started when M.I.T. was operating the laboratory. However, the laboratory facilities were not large enough to prove that the process would work on a production scale. If the Grand Junction experience is satisfactory, the recovery of uranium from certain types of ores will be improved and costs cut considerably.

Nickel-Cobalt Discovery in Cuba

The possible potential importance of Cuba as a producer of nickel is indicated by the recent announcement made by the Freeport Sulphur Co. of America that the discovery has been made of an orebody comprising a minimum of 40,000,000 tons of nickel in the Moa Bay area there. The following article briefly describes the treatment process necessary for the refinement of the new ores, and continues by presenting interesting notes on the importance and sources of nickel in the world to-day.

Within the next few years Cuba may well become the free world's second most important source of nickel, following Canada as a major supplier, with the disclosure by the Freeport Sulphur Company, New York, of the discovery of an orebody comprising at least 40,000,000 tons of nickel in the vicinity of Moa Bay, about 500 miles east of Havana. The Freeport Company, according to official reports, will shortly begin building a pilot plant in Cuba for the recovery of nickel and also of cobalt, another scarce product contained in the ore. The new Moa Bay deposit averages about 1.35 per cent nickel and about .14 per cent cobalt. These orebodies are larger and more valuable than the deposits which are now supplying the U.S. Government's Nicaro Nickel plant.

This is not the Freeport Company's first venture in the metals field, as the company was the first to mine and process nickel on a large scale and was responsible for the development of new methods for the recovery of this metal from ores previously unusable. One of the company's subsidiaries, the Nicaro Nickel Company, designed, built and operated for the U.S. Government in World War II a \$32,000,000 plant at Nicaro, to recover nickel in the form of nickel oxide from nickel ores.

LEACHING BY SULPHURIC ACID

The Moa Bay ores can readily be treated by the process developed by Freeport for the Government plant. However, as a result of extensive research on lateritic ores, the company has developed a new and better leaching process involving the use of sulphuric acid. Chemical Construction Company, a subsidiary of the American Cyanamid Company, has also made important progress in the treatment of nickel and cobalt ores, among their developments being a process for the production of nickel as metal, rather than oxide, and also of cobalt metal. Three new commercial plants designed to use this technique are already in operation or are under construction.

Reliable sources state that the combination of the sulphuric acid leaching process and Chemical Construction's metals technique represents a great improvement over the present Nicaro process because it permits the recovery of cobalt and also because nickel metal is more valuable than nickel oxide. Meanwhile, Freeport and Chemical Construction have concluded an agreement to collaborate in this field. The chemistry of the processes having been satisfactorily demonstrated, Freeport will now build a pilot plant to obtain the engineering information for the design of a commercial plant to treat the ores. The company hopes to be able to start commercial production at a minimum annual rate of 30,000,000 lb. of nickel and 3,000,000 lb. of cobalt during 1955. In 1952, the entire free world output of nickel was a little more than 300,000,000 lb., of which the United States used more than two-thirds.

Nickel is currently America's most critical strategic material, and its use is rigidly controlled. Moreover, the need for nickel is expected to mount in the years ahead. The latest D.M.P.A. expansion goal calls for a supply of 380,000,000 lb. in 1955, which is almost double the supply available to the nation in 1952.

Although no more than a laboratory curiosity fifty years ago, to-day nickel is vital to modern industrial economy. It serves wherever there is a need in metals for strength and durability or for resistance to wear, shock or chemical

action. It is a vital component of two-thirds of all stainless steels and is used in large quantities in cast iron and in the undercoating and plating of many other metals.

Nickel's resistance to heat and corrosion makes it an extremely desirable component of alloys for equipment used in the production of glass and ceramics, chemicals, paper, textiles, and plastics and in the processing, freezing and packaging of foods.

Military weapons have created a tremendous demand for nickel, and with every advance in engineering the demand increases. For example, in some instances, a single jet engine requires as much as 2,400 lb. of nickel to give it the heatproof and shockproof qualities essential to high-speed operation.

THE CHIEF SOURCE

Canada long has been the chief source of nickel. The Dominion accounts for slightly over 90 per cent of all free world production, which in 1952 amounted to about 315,000,000 lb. New Caledonia supplies about 7 per cent with the remainder coming from Cuba, the Union of South Africa and the United States. The United States' own annual production of nickel is so small that it would be exhausted by the nation's industry in less than three days.

Virtually all of the Canadian output is derived from the copper-nickel sulphide ores in the Sudbury basin of Ontario. The world's largest single producer of nickel is the International Nickel Company of Canada, Ltd. Its deliveries of nickel in all forms in 1952 totalled slightly more than 249,000,000 lb., or 90 per cent of all Canadian production. The only other large producer of nickel in Canada is Falconbridge Nickel Mines, Ltd., which also operates in the Sudbury district.

In New Caledonia, nickel is produced by three operators. In Cuba, a U.S. Government-owned plant, now being operated by the Nickel Processing Company, 60 per cent of which is owned by the National Lead Company, is now producing nickel in the form of oxide at an average rate of about 2,000,000 lb. per month.

As part of a long-range expansion programme to obtain more nickel, the United States Government has arranged with four Canadian firms, East Rim Nickel Mines, Ltd., Milnet Mines, Ltd., Sherritt Gordon Mines, Ltd., and Falconbridge, for additional supplies of nickel.

In so far as the Cuban situation is concerned, it is of interest to remember that the Nicaro plant was built during the war to provide nickel oxide, containing approximately 75 per cent nickel, which of course can be used directly in steel alloys for strengthening properties. At the time it was opened, the plant cost approximately \$32,000,000, while the rehabilitation and improvement programme which was instigated some time ago is reputed to have cost about \$10,000,000.

Imports of nickel into the United States during February of this year comprised 12,717,576 lb. of metal, 1,611,054 lb. of matte, and 2,351,463 lb. of oxide and oxide sinter from Canada, 1,560,268 lb. of metal from Norway, 3,687,677 lb. of oxide from Cuba, 302 lb. of metal and 63,056 lb. of nickel scrap from the United Kingdom, and 10,000 lb. of metal from Belgium-Luxemburg. The nickel content of the new metal, oxide, oxide sinter and matte imported into the United States is estimated at 18,748,000 lb. in February.

Annual Dinner of the Institution of Mining and Metallurgy

The Institution of Mining and Metallurgy held its annual dinner at Drapers' Hall, Throgmorton Street, London, E.C.2., on May 7, which was attended by over 150 members and their guests under the chairmanship of their President, Mr. Vernon Harbord.

The toast of "The Institution" was proposed by the Rt. Hon. Sir Arthur Salter, M.P., Minister of Materials. The triumphs and achievements of mining and metallurgy, he said, largely constituted the foundation and fabric of modern life. If a single description of the age in which we lived were called for it might justly be called the metallurgical age. He went on to say a few words about the problems of Government policy in so far as they impinged or might impinge upon those of the mining engineer. In the first place, the present Government definitely desired and intended to go back to free trade in metals as quickly as possible. To mention only the metals which came within the province of those whom he was addressing, lead was returned to private trading last October, zinc in January, and on Monday of that week he was able to announce that copper would similarly return. The importance of copper alone, measured in terms of import value, was considerably greater than that of all the other metals, and indeed of all the commodities which still remained the responsibility of his department.

Underlying all this, and determining everything in which the Institution was interested, was the fact that this little island, by and large, had no raw materials of its own, and had to import almost everything from abroad. That, of course, quite apart from the problems which presented themselves to the people in the other countries concerned, made it necessary that those interested in mining and metallurgy, as well as those who had departmental responsibility, should be concerned all the time to continue and increase the enterprise which had developed mining, financed by British capital and organized and worked by British skill and experience, all over the world.

GOVERNMENT ENCOURAGEMENT FOR PRIVATE ENTERPRISE

Sir Arthur Salter did not think—nor did the Government think—that that was primarily a Government task, but it was a task in which private enterprise ought to be suitably encouraged by Government policy. All of them had seen the report of the Committee which had surveyed the resources of this country. They had the surveys of the Geological Survey and other bodies. But between the surveys and the actual exploitation there was, of course, a considerable gap. Was there anything that, within the limits which must constrain them, the Government could do to narrow the gap between the various surveys and the exploitation by private enterprise?

The Government, of course, Sir Arthur Salter continued, had done something as regards taxation—40 per cent initial depreciation allowance for mining work, whether in this country or overseas. In addition, and not less important, was the prophecy of the early, but not premature, death of the excess profits levy.

He next turned to commodity agreements. Taking tin as an example, he said that if negotiations were started on the basis that the producers thought they should have a permanently higher price and the consumers similarly a permanently lower one, any real agreement would be impossible. But if they started on the principle that every

commodity agreement must allow for supply and demand, and that its purpose was not to make the average price over a number of years higher or lower than it would otherwise be, but so to direct matters that the fluctuations were less violent and less frequent, then they could be sure of having served the common interest.

IMPORTANCE OF THE INSTITUTION

Sir Arthur Salter then returned to his main theme—the health of the Institution, which, he said, he proposed with the greater pleasure because, apart from the intrinsic merits of the Institution, he thought it was of the greatest importance that in one economic activity after another there should be some common institution which was concerned, not with competing business interests, but with the general interests of the whole of the economic activity in question, and, more than that, with the standards of efficiency and qualification of those taking part in it, this for the benefit of the general public as well as of the producer. They would never return to the situation which was so nearly reached in the 19th century when adjustment of supply and demand was determined by free and unrestricted competition, limited only by the criminal law against fraud.

Some combination there must be between the general framework of regulation and assured standards of qualification and conduct on the one hand, and, on the other, the urge of individual competition. In some ways it was the distinctive feature of the age in which we lived to find, he would not say a compromise, but a combination of two opposing forces to the best advantage of both.

RECOGNITION OF BENEFICIAL BUDGET

Replying, the President (Mr. Vernon Harbord) said they were particularly fortunate to have Sir Arthur Salter as their guest because since last summer the administrative responsibility for the supply of most of the minerals and materials in which they were interested had been with his department. He referred to a meeting of representatives of the Institution with the deputy secretary of his department with the object of furthering the recommendations of the Westwood Committee for the formation of a Mineral Development Commission on the lines set out in that report. That was something which the Council of the Institution thought well worth doing, and one which would help greatly to resuscitate the mining industry in this country. Amongst other problems was that of taxation and development of mining properties by British companies on which they had made representations from time to time to the Government in power. It was therefore very encouraging to see that in the present budget the mining industry had received special attention in respect of these allowances. These were only a preliminary and he sincerely hoped they would be followed up. We were in considerable difficulty in this country because of competition with companies interested in mining in other countries. The fact remained that not a single company had been registered in Great Britain since 1939 for the purpose of developing an overseas mining proposition. Sir Arthur Salter had given a very clear outline of what was in the Government's mind, and he could assure him that anything the Institution could do in the way of getting information or assisting his department with advice or help

would gladly be done. It was only by getting together with the Government department (whose side of the question had to be fully appreciated as well) that real benefit could accrue.

Turning to the affairs of the Institution, Mr. Harbord said that the membership showed a slow but steady increase, and it was gratifying to find a large student entry from the various schools and colleges. He also referred to the increased activity of the local sections in Northern and Southern Rhodesia. Education of young men for the industry had always been a matter of great interest to the Institution. The aim was to ensure an adequate supply of the right type of young men. It was somewhat disturbing to find that the entry in the mining colleges was only about 80 per cent of the full capacity. In the past the industry had been largely recruited by sons who followed in the steps of their fathers, but with mining development throughout the world this was no longer sufficient, and he felt that a greater effort must be made to bring to those responsible for education the possibilities of mining, metallurgy, and geology as a career for boys. The profession needed boys of the right calibre.

TRAVELLING FELLOWSHIPS & SCHOLARSHIPS

The President recalled that after the conclusion of the Nuffield Foundation scheme for travelling fellowships and scholarships, the Institution appealed to Industry for funds to continue a similar scheme for both mining men and metallurgists, and as a result of the generosity of their many friends, scholarships had been available at various schools and universities. During the long vacation this summer 18 students would be sent to Canada, and others to Norway, Portugal, and Finland. He was pleased to record that the Nuffield Foundation had offered a donation of £3,000 to the Institution scheme, and it was hoped that next year it would again be possible for members of teaching staffs to make visits to the more important mining and metallurgical areas.

Professor J. A. S. Ritson, President-elect of the Institution, proposed the health of the guests, and briefly outlined the distinctions of several of them—the High Commissioners for the Union of South Africa and for Southern Rhodesia, Sir Arthur Salter, Lord Falmouth, chairman of the Imperial College, and the various representatives of mining companies and professional associations.

Sir Gordon Munro, High Commissioner for Southern Rhodesia, who made the first of the two responses, said how much the country he represented owed to all that the Institution had done and stood for. He liked to think that in the future his country would do yet more to repay the obligation, especially with the coming of Federation, a subject, however, on which it would be improper for him to enlarge.

CONTRIBUTION OF MINING INDUSTRY TO TERRITORIAL DEVELOPMENT

Mr. A. Chester Beatty, Junior, who also responded on behalf of the guests, said that he thought it might be worth while to cast the mind back and examine the position in the five-year period before the last war. In that period over £100,000,000 was raised in London for mining companies directed and financed from the City. He gave other figures, all of which showed the vital position occupied by mining companies overseas in those days. He himself had just returned from Sierra Leone and other parts of Africa, and his overwhelming impression was that mining was the quickest way to the development of a territory. But mining was a very speculative business.

It was impossible to overstress, said Mr. Chester Beatty the importance of the technical side of mining. What the technical people did for the industry was the key point.

Obviously one must have a large reserve of high grade ores, and it was the technical people who were the only ones qualified to pronounce on the subject. It was up to them to see that notwithstanding all the manifold difficulties of the present time, the mineral resources of this great Empire were developed. If this were done he believed that this great country and the British Commonwealth might be still the greatest economic centre in the world.

Notable among the guests of the Institution on this occasion were :

Rt. Hon. Sir J. Arthur Salter, G.B.E., K.C.B., M.P.; Rt. Hon. Lord Baillieu, K.B.E., C.M.G.; Sir Gordon Munro, K.C.M.G., M.C., High Commissioner for Southern Rhodesia; Mr. A. Chester Beatty, Jnr.; Mr. E. McCarthy, Deputy High Commissioner for Australia; Dr. Albertus L. Geyer, High Commissioner for South Africa; Rt. Hon. Viscount Falmouth, Chairman, Governing Body of the Imperial College of Science and Technology; Sir Dougal Malcolm, K.C.M.G.; Professor F. C. Thompson, President, Institute of Metals; Sir George Seel, K.C.M.G., Senior Crown Agent for the Colonies; Mr. Stanley Robson, President, Institution of Chemical Engineers; Col. Clive E. Temperley, O.B.E., M.C.; Mr. H. C. W. Roberts, C.B.E., M.C., H.M. Chief Inspector of Mines; Mr. Alfred Roebuck, President, Institution of Mechanical Engineers; Mr. R. A. Walker, President, British Overseas Mining Association; Mr. L. H. Cooper, Chairman, Mond Nickel Company Limited; Professor M. O'Neill, President, Institution of Metallurgists; Mr. L. L. H. Thompson, C.B.E., Deputy Master, Royal Mint; Dr. G. M. Lees, M.C., D.F.C., F.R.S. President, the Geological Society; Dr. W. J. Pugh, O.B.E., F.R.G., Director, H.M. Geological Survey and Museum; Mr. T. A. Stannard, South African Mines Department; Mr. L. Farrer-Brown, Secretary, Nuffield Foundation; Dr. A. D. Merriman, G.C., Registrar-Secretary, Institution of Metallurgists.

Correspondence

NORWEGIAN MINERAL AND METAL SHIPMENTS

The Editor, *The Mining Journal*.

Sir,—The article "Norwegian Mineral and Metal Shipments in 1952," published in *The Mining Journal* of April 17, 1953, p. 448, contains some misleading information which I believe ought to be corrected.

Imports for 1952 (excluding ships) are given as Kr. 5,579,249,000,000 (£278,962,450,000). It should be Kr. 5,579,249,000 (£278,962,450), which is less by a factor of a thousand! A similar mistake has been made for the export figure and also for the trade balance. It may be mentioned that the trade balance is incorrectly stated as difference between imports and exports. Certain important commodities such as whale oil and sperm oil are not entered in the trade returns because they are not exported from Norwegian territory.

Imports of coal from Svalbard are claimed to be 765,336 tons. This figure actually represents total imports of coal of which only 283,100 tons came from Svalbard.

In the section on imports the bauxite tonnage is given with no mention of alumina. The Norwegian aluminium industry is essentially based on alumina of which 72,504 tons was imported in 1952. Only one aluminium plant manufactures its own alumina from bauxite.

In the section on exports important commodities such as ferro-silicon (55,614 tons) and silicon-manganese (18,083 tons) are omitted.—Yours truly,

Oslo, April 27, 1953.

OLGE J. ADAMSON.

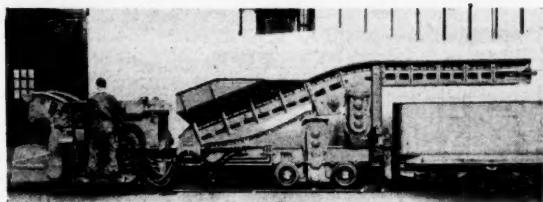
[We are obliged to Dr. Adamson for the corrections to the figures given in our issue of April 17. So far as the trade aggregates given are concerned, we fear that final corrections to the original proof either did not reach, or were not noted, by our printers hence the astronomical increase in the figures given. We are much obliged for the information regarding the invisible exports of whale and sperm oil. The alumina imports should certainly have been noted but space did not permit of the enumeration of all imports and exports, and this must explain the omission of ferro-silicon and silicon-manganese. The attribution of all the coal imports to Svalbard was based on our correspondent's report.—EDITOR, M.J.]

MACHINERY AND EQUIPMENT

A Compact Heavy Loader

At the German Industries Fair at Hanover, a small loader capable of heavy loading duties was recently displayed. The unit, named the H.L. 100, was shown combined with a rubber-armoured link belt loader. It is announced that the small general outside dimensions together with the low operating height, makes this machine well suited to use in small tunnels or drives.

The dimensions of the loader are 6 ft. 8 in. by 2 ft. 4 in. by 4 ft. 3 in. with lowered bucket. These dimensions allow the



The H.L. 100 loader unit

unit to be transported underground in cage or skip without stripping. The service weight is 5,300 lb. and working height depends on the type of tubs utilized. The bucket capacity ranges from 120 to 160 litres (4½ to 5½ cu. ft.) according to the local conditions pertaining.

In operation, the hand levers automatically return to the neutral position when released and thus arrest all movement of the loader. This type of safety control not only aids accident prevention measures, but adds to ease of handling the unit. Under normal manufacturing conditions the controls are installed on the left hand of the machine, but if necessary they may be installed on the right, to enable two units to work side by side in a drive.

The drive of the new loader for travel and hoist is by two equal and interchangeable 5-cylinder piston air-motors of high starting torque and low air consumption. Combined with the loader is a starting belt. In most applications this unit can be driven by compressed air, although electric drive is available if required. A slow-action car pusher enables car capacity to be fully utilized. The unit can load trolleys up to 12 ft. in length.

A Thruster Applied to Coal Scraper

An interesting application of an electro-hydraulic thruster manufactured by The British Thomson-Houston Co. Ltd. is use of that equipment in a coal sampler recently put on the market by International Combustion Ltd. The device is known as the Pollock sampler, and is reported in the publication *B.T.-H. Activities, Vol. 24, No. 2*, to have been developed to meet the need for accurate coal sampling in generating stations.

Units of the equipment include a hinged scraper arm operated by the thruster through a link mechanism carrying the scraper across the width of the conveyor belt. In operation, the scraper removes a cross section of the material and delivers it to a side chute. During the return journey the scraper arm rides back over the material without disturbing it owing to the fact that the lower section of the scraper arm is hinged and spring loaded.

The thruster used in this application is a TK5005 which exerts a thrust of 500 lb. through a 5 in. stroke. The driving motor is totally enclosed, fan cooled, and operates from a 400/440 volt, 50 cycle, 3 phase supply. The enclosure ensures complete protection of the windings from dust and dirt.

The new sampler is stated to be readily applicable to new and existing conveyor installations and is not restricted to coal handling operations alone, but may be utilized for a variety of materials.

An All-Purpose Excavator

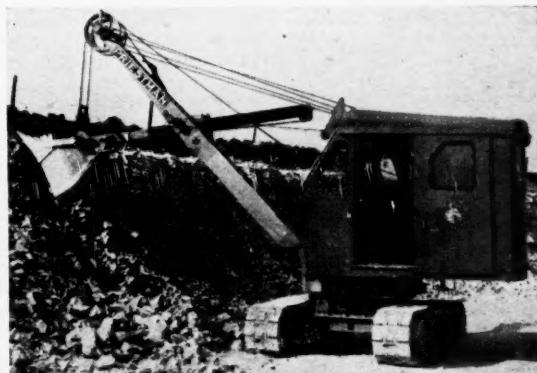
The Priestman "Wolf" Mark IIIB excavator is presented by the manufacturers as a development of their $\frac{1}{2}$ cu. yd. all-purpose machine. It is to be generally released to the home and export markets in July. Prototype machines have proved efficient in all spheres of general contracting work, the winning of raw materials, and land drainage operations.

In the wide range of front-end attachments, complete interchangeability between the equipments normally used for construction work—drag shovel, skimmer and luffing shovel—and quick conversion from one to another, has been achieved. The universal jib employed for these three equipments is made of deep box-section all-welded steel that is strong and light, the slot provided for passing the twin digging ropes through the centre of the jib having been eliminated. The two-part digging rope is reeved through a bail block, interchangeable on both the trencher and skimmer equipments. This important feature of interchangeability extends to ropes, sheaves and jib details so that conversion from one equipment to another involves no loose oddments and the time occupied is reduced to the absolute minimum. There are two sizes of sheaves in all three equipments and their large diameters and improved method of reeving ensures a greatly improved rope life and operating efficiency.

A feature of the new design is the elimination of the use of a forward drum in the case of drag shovel and skimmer operations. As a front drum is now required for power crowd shovel only, it has been mounted permanently in the crowd shovel jib between the jib foot lugs. The crowd ropes are, therefore, left permanently reeved on this drum and here again conversion of the machine to crowd shovel operation is greatly simplified. Improvements in the design of drag shovel and crowd shovel buckets have been effected in that these are now provided with a cast steel lip with socketed reversible teeth which will make these equipments exceptionally aggressive in dealing with hard digging.

Power for the "Wolf" Mark IIIB universal excavator is provided by a Dorman high speed diesel engine which supplies ample power for all working conditions. The engine is arranged to develop 33 b.h.p. at 1,050 r.p.m. Its unit construction incorporates radiator and a 22 gallon capacity fuel tank.

Dragline, grab and lifting crane attachments are, of course, available and operate from a common 32 ft. 2-piece lattice jib,



The Priestman Wolf IIIB Excavator

extensible by the insertion of a centre section to 40 ft. The maximum discharge radius of the dragline using a $\frac{1}{2}$ yd. bucket is 35 ft. while the crane is designed to lift 3½ tons at 10 ft. radius. The Priestman patented "side dragline" attachment for land drainage operations operates from a special 26 ft. channel jib designed to withstand the special stresses and strains set up by its offset motion.

Dimensional statistics show that the crowd shovel has a maximum digging height of 16 ft. 6 in. and a maximum dumping radius of identical dimension. Maximum dumping radius of the dragline is 25 ft.

METALS, MINERALS AND ALLOYS

COPPER.—This has been rather a quiet week with regard to copper and though the opening of their books for June by U.S. producers failed to attract any active interest at first, towards the end of last week the situation became quite active for a while, and it was judged that consumer demand had been somewhat under estimated. The last reports are that June supplies are practically sold out and that some buying interest has developed for first half July shipment on the basis of 30 c. valley points. On a longer view Mr. R. P. Koneig, President of the Cerro de Pasco, expressed himself and not too sanguine, as in addition to the evidence of the existence of an adequate supply, new mines were coming on the scene, some of which would sell their output at guaranteed prices suggesting a fall in prices eventually. The N.P.A. has authorized producers of civilian goods to buy foreign and secondary copper without deduction from their allotment quotas. Steady progress is reported in the preparation and equipment of the White Pine mine of the Copper Range Co. The adit has been completed and underground development is in progress. As the mill and smelter are not likely to be in production for some two years, development ore will be stockpiled. Earlier estimates for copper content are reported to have been confirmed. The Northern Peru Mining and Smelting Company, a subsidiary of the A.S. and R., is stated to have applied to the International Bank for Construction and Development for a loan of \$160,000,000 to explore copper deposits in Toquepala in South Peru and proposes to erect a refining plant, railway construction and port installations. The deposits are believed to resemble in nature and importance those at Chuquicamata, in the north of the Republic.

LEAD.—Lead has been a quiet market. Metal Exchange prices on Wednesday closed £80 $\frac{1}{2}$ /81 for prompt and £79 $\frac{1}{2}$ /79 $\frac{1}{2}$ for forward. United States demand is described as fairly active. U.S. output and imports were both down in February at 41,901 s.tons and 49,160 tons respectively—falls of 5 per cent and 18 per cent for the two categories. Strikes in Mexico have shut down more properties. These are the Santa Barbara and Taxco of the A.S. and R., and the San Francisco Mines of Mexico which supply the American Metal Company. The two first normally produce some 1,650 tons a month of refined lead and some 2,000 tons of zinc; the San Francisco Mines, large producers of silver, turned out some 2,000 tons of lead and 3,000 tons of zinc. The strike at Taxco has now been settled.

Mr. Koneig predicted at the meeting at Cerro de Pasco that with the improved statistical position of lead he hoped that prices would not decline below the present level and over the next few years they might experience higher quotations from time to time.

The prospects of the Simpson Bill being passed seem to have become somewhat less with the calling of evidence from the State Departments. The Secretary of the Interior, Mr. McKay, testifying in support of the White House request for a simple extension for a year of the reciprocal trade agreement, said that the mobilization targets for increased output of lead and zinc had largely been met, as had stockpile objectives, and that supplies currently exceeded demand. He suggested that domestic mines should seek relief under escape clause procedure. Another Bill has been introduced into Congress by Representative Patterson which would except scrap from the proposed suspension of duties on metals.

TIN.—Tin quotations have continued to fluctuate with their customary velocity and since our last the tendency on the Metal Exchange and in Singapore has been downwards. This has had an effect on American sentiment and the last price we have is 96.5/97 c. nom. and there has been active business in options. In the Straits the control over the destination of tin exports have been tightened and exporters are required to furnish a certificate of domestic consumption on exports to all countries with the exception of the United States and Canada and to the members of the London Metal Exchange, in order to facilitate U.K. exchange control. The Malayan Government has instructed its departments to reduce expenditure wherever possible. While there is no news of any closing down by dredges except for repair or removal to fresh

sites, we understand that some 30 or more Chinese mines are now out, though production figures so far show practically no reduction. Stocks of tin in Malaya at all situations at the end of March are given as 4,698 tons compared with 6,352 a month earlier. Elsewhere in this issue the speech of the managing director of the Straits Trading Company, Mr. Fergusson, reviews the situation in the Far East and is reviewed under Notes and Comments. In connection with the forthcoming meeting of the working party of the International Tin Study organization it is reported that Japan has applied for membership.

A softening of the export market in tin plate is reported from the U.S. but domestic demand continues good. The European output is said to be improving.

The April output of the Longhorn smelter was again heavy at 3,750 tons. The total for the first four months of the year is 15,000 tons, an average of 3,750 tons monthly, as compared with 7,204 tons in the same period last year. This reflects the much improved concentrate supply noted last week. The report of Patiño Mines and Enterprises for 1952 discloses a net profit of \$1,599,078 compared with \$884,816 and Bs.119,058,292 in 1951. This included the release to the company of concentrates containing some 800 tons of metal accumulated at Chilean ports. The company has offered to co-operate in any Government plan designed to benefit the people of Bolivia and facilitate returns on capital invested. The Bureau of Mines figures of primary tin consumption in the U.S. for February were 4,441 tons as against 4,809 tons in January. Stocks were reduced by the end of the month to 50,194 tons excluding the strategic stockpile and afloats. This figure represents rather over a year's supply on the 1952 consumption rate.

ZINC.—In the U.S. the demand for Prime Western has improved considerably with special high-grade qualities remaining tight. Imported metal is offered around 10 $\frac{1}{2}$ c. duty paid. Production in the United States continues to be under that of last year. In April the figure was 80,504 s.tons and shipments 86,156. As a result, stocks were down at the end of April to 94,254 s.tons compared with 99,864 at the beginning of the month. Unfilled orders at the end of April were nearly 16,000 tons lower at 38,722 s.tons.

Mr. Koneig, of the Cerro de Pasco Corporation, anticipates a higher trend in zinc prices in the future as with current cost of production the present price of 11 c. was not sufficient to provide output to meet the growing world demand and when the present overall stock position was overcome he believed that prices would rise to a satisfactory level. Zinc is now the major product of Cerro de Pasco being more than twice that of their lead output; lower grade zinc concentrates are being stockpiled in Peru to await better prices. The first unit of the new electro-thermic plant should come into production about next August; eventually, probably in 1957, the company should be producing some 200 s.tons of refined zinc daily.

ALUMINIUM.—Production of primary aluminium in the U.S. continues to increase and March broke all previous records with an output of 104,920 s.tons. Output for the quarter was 287,004 s.tons which broke the war-time record made in the fourth quarter of 1943 by some 3 per cent. Of course the expansion programme is very far from complete and no doubt output will continue to expand. It is interesting to learn that during last quarter 13,683 tons of aluminium foil were shipped which goes far to explain the progressive decline in the consumption of tin for the manufacture of tinfoil.

U.S. producers have been directed by the N.P.A. to set aside some 130,000 tons of aluminium for the third quarter of the year for military orders direct and indirect. After this and stockpiling requirements are met, it is estimated that the supply available might be up by some 5 per cent from that of the fourth quarter of 1952, computed at 371,000 tons. Allowing for imports from Canada and an increase in deliveries to stockpile, the supplies in the third quarter of the current year are computed as 390,500 s.tons.

Steady progress is being made in the expansion programme for aluminium production in India, the target being 20,000 tons at the end of 1956 as compared with 4,000 tons achieved in 1951. The Indian Aluminium Company is studying the possibility of installing a 10,000 ton smelter adjacent to the Hirakud project. Expansion of the smelter in Travancore to double the

current capacity of 2,500 tons will, it is hoped, be finished by the middle of next year.

MOLYBDENITE.—The Defence Materials Procurement Agency has signed an agreement with the Molybdenite Corporation of Canada containing an option to buy up to 3,000 tons of molybdenite in the next five years, with a floor price of 63 c. per lb. for 90 per cent concentrates for any portion of the total which the government does not buy under its option.

TITANIUM.—The President of Kennecott told the shareholders in New York last week that the construction of the last of five electric furnaces at the Quebec Iron and Titanium Corporation has now been completed and all five are now in operation.

TUNGSTEN—There is still an absence of any fresh news regarding transactions in tungsten concentrates; with American buyers apparently waiting on developments. A reduction in the export price of Spanish scheelite to what is termed the "international price" of \$40 per unit is reported through the existence of a contract with the United States for wolfram maintains the price of this mineral at \$57 per unit.

Iron and Steel

The restoration of a free market in iron and steel has been universally welcomed. Prices, of course, are still rigidly controlled, and the abolition of the rationing system does not of itself increase the tonnage of material available for distribution. But consumers are now released from the irksome obligation to obtain a licence to purchase such supplies of iron or steel as they may require and they believe that the resumption of direct dealings with the makers will be much more satisfactory than the now discarded system of officially authorized allocations.

If shortages persist, the makers are doing their utmost to overtake industrial requirements. To this end many of the plants are to be kept in continuous operation throughout the Whitsun and Coronation holidays. Moreover, outputs continue to expand. Pig iron production has been raised to its highest peak and it is chiefly due to increased supplies of hot metal that ingot production continues to expand. Another favourable influence is the steady flow of scrap. Even in trade circles it was thought that, after the success of the 1952 scrap drive, less home scrap would be obtainable this year. In point of fact there has been an increase in the deliveries of both home and foreign scrap. Stocks have increased and the scrap ratio in steel making has increased from 55 to 58 per cent. Foreign ore is coming to hand in adequate tonnages, and blast furnacemen's chief anxiety is the provision of adequate tonnages of hard coke.

The demand for foundry pig iron is rather quiet at present, but outputs of haemetite and low and medium phosphorous grades are fully taken up and very substantial tonnages of foreign steel semis and certain types of finished steel are being imported to supplement deliveries from home sources. The most embarrassing deficiency is that of steel plates, and to bridge the gap a contract has been fixed for the delivery of 10,000 tons of Austrian plates before August. Home production is also being speeded up and it is hoped that the more urgent needs of the shipyards and wagon-building shops will be met. Bookings for heavy sections and the heavier gauges of sheets are also very impressive but there is less interest in light sheets, small bars and light sections.

The London Metal Market

(From Our Metal Exchange Correspondent)

Activity in the tin market has decreased but prices remain very volatile: a welcome feature has been the continued increase in stocks in warehouse, and it is hoped that these will now be maintained and the period passed of a large backwardation. A step of great importance has been taken by the Singapore authorities towards eliminating business in tin being based on cheap sterling, by the announcement that in future all exporters, other than members of the London Metal Exchange, will have to be ready, if requested, to produce a Customs import certificate for domestic use from the country of ultimate destination. Members of the London Metal Exchange are

exempt owing to the existence of the financial control scheme operated by the Bank of England which covers their activities. The Eastern price on Thursday morning was equivalent to £764½ per ton c.i.f. Europe.

It is hoped that the new copper contract for use on the Exchange will be available soon, and that copies will be circulated to interested parties before the final draft is adopted. The copper industry as a whole is pleased that public trading will cease, and hope that the start of the market will be made as smooth as possible from lessons learned from the opening of the other markets. A good omen is the Ministry's action in permitting contracts for the metal to be entered into at any time between now and August 4 provided that physical delivery is not envisaged earlier than August 5.

Lead and zinc remain featureless, and it is not easy to see when the situation is likely to alter as supplies are adequate for present demand, although a somewhat firmer tendency developed in both metals in mid week.

Closing prices and turnovers for the week are given in the following table:—

	May 7 Buyers	May 7 Sellers	May 14 Buyers	May 14 Sellers
Tin				
Cash	£770	£775	£757½	£760
Three months	£767½	£772½	£742½	£747½
Settlement	£770		£757½	
Week's turnover	985 tons		665 tons	
Lead				
Current month	£79	£79½	£81½	£81½
Three months	£78½	£79	£80	£80½
Week's turnover	4,950 tons		3,725 tons	
Zinc				
Current month	£68½	£68½	£69½	£70
Three months	£68½	£68½	£69½	£70½
Week's turnover	5,525 tons		6,350 tons	

MAY 14 PRICES

COPPER

Electrolytic £253 0 0 d/d

TIN, LEAD AND ZINC

(See our London Metal Exchange report for Thursday's prices)

ANTIMONY

English (99%) delivered,	
10 cwt. and over	£225 per ton
Crude (70%)	£210 per ton
Ore (60% basis)	20s. — 22s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) £483 per ton

OTHER METALS

Aluminium, £161 per ton	Osmiridium, £40 oz. nom.
Bismuth (min. 4 cwt. lots) 17s. lb.	Osmium, £65/70 oz. nom.
Cadmium (Empire), 14s. 4d. lb.	Palladium, £7 15s./£8 10s. oz.
Chromium, 6s. 5d./7s. 6d. lb.	Platinum, £27/£33 5s.
Cobalt, 20s. lb.	Rhodium, £42 10s. oz.
Gold, 24s. f.oz.	Ruthenium, £25 oz.
Iridium, £60 oz. nom.	Quicksilver, £70 10s./£71 ex-warehouse
Magnesium, 2s. 10d. lb.	Selenium, 30s. 6d. nom.
Manganese Metal (96%-98%) £280/£295	per lb.
	Silver 74d. f.oz. spot and f'd.
	Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth	65% 9s. lb. c.i.f.
	60% 8s. 9d. b.f.d.
Chrome Ore—	
Rhodesian Metallurgical (lumpy)	£14 18s. per ton c.i.f.
" " (concentrates)	£14 18s. per ton c.i.f.
" " Refractory	£14 10s. per ton c.i.f.
Baluchistan Metallurgical	£16 11s. 6d. per ton c.i.f.
Magnesite, ground calcined	£26 - £27 d/d
Magnesite, Raw	£10 - £11 d/d
Molybdenite (85% basis)	103s. 10d. per unit c.i.f.
Wolfram (65%)	World buying 305s. - 315s. 352s. 6d. Selling
" Scheelite	World buying 290s. - 300s. 342s. 6d. Selling
" Tungsten Metal Powder	25s. 9d. nom. per lb. (home)
Ferro-tungsten	22s. 10d. nom. per lb. (home)
Carbide, 4-cwt. lots	£35 13s. 9d. d/d per ton
Ferro-manganese, home	£49 15s. 0d. per ton
Manganese Ore U.K. (48%-50%)	6s. 1d. per unit
Brass Wire	2s. 7½d. per lb. basis
Brass Tubes, solid drawn	2s. 1½d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

In dull and lifeless markets, gilt-edged were outstandingly steady, despite the Egyptian crisis. Last week's revenue surplus was £11,000,000. The total deficit for the current year now stands at £39,400,000—nearly £70,000,000 less than the similar deficit for last year.

Kaffirs were idle and towards the end of the period some selling developed. Fears were expressed concerning the June dividends and these crystallized in forced selling of East Rand Proprietary shares on an unwilling market. Many other stocks also came back sharply. Johannesburg, on the other hand, was mildly optimistic. Reports from South Africa indicate that the labour shortage is having one good effect; the encouragement of research on mechanization and suitable training of Africans to use more advanced equipment. Daggafonteins were an exception to the general trend. It was announced that their uranium plant, newly in production, is considerably bigger than that which recently started at West Rand Consolidated. There have been various estimates concerning output, but all these are really valueless as the grade of ore is not known. East Daggafonteins hardened in sympathy.

In the O.F.S. prices again drifted, St. Helena reaching a new low record. Some interest from Johannesburg had a steady influence on the Freddies group. President Brand were outstanding. Rumours of high values in the initial underground development caused sharp buying against the general trend. President Steyn hardened also.

West Africans, although quiet, recorded a few changes. Ashantis, after having risen to 23s. 9d. on the news of tax reductions expected after January, fell back on profit-taking. Bremang rose the turn on the better monthly figures. Operating profits for April came out at £29,669 against £20,656. Amalgamated Banket were steady on the better figures, and Ariston unchanged following the lower working profit. The tonnage and revenue were temporarily affected by technical faults in the

waste conveyor system.

Zambesi Exploration were better on the higher Union Minière dividend. The latter company is paying 1,250 Belgian francs against 1,000 last year. The Ooregum mine is definitely to close down. The committee recommends that the lease be handed to Champion Reef for extracting the remaining gold deposits now at great depth.

In the diamond market, C.A.S.T.S. shed 6d. on the lower interim dividend. De Beers Deferred eased while the Preferred hardened. It is understood that Paris has for some time been selling the Preferred and buying the Deferred shares. It is believed that this switch transaction is now finished.

Coppers displayed rather more interest. Nchanga hardened in anticipation of the coming dividend and Tanks rose due to their interest in Union Miniere. Speculative buying pushed Rhodesia Katanga 6d. higher. Rumours of uranium on the property were unconfirmed by the Chairman.

Eastern tin shares were mostly better. Although the metal price has recently been falling, the overall picture is steadier than a month ago and it seems probable that most companies can make a profit if the price stays around the present level. Beraltis rose sharply; at one time they were as high as 27s. 6d. bid. A bear squeeze developed in a market short of stock. The yield at the present price is over 37 per cent. Amalgamated Tin produced 51 tons of columbite in the past month, well up to expectations. Jantar produced 18 tons of columbite.

Lead/zinc shares showed little activity. There was some recovery in Barriers and buying of Consolidated Zinc in advance of the preliminary figures. The strike at San Francisco Mines caused a drop in the shares.

In the oil group, Shells were outstanding following the maintained dividend on the increased capital and the good figures produced by Royal Dutch. Some knowledgeable buying of Burmah Oil took place.

RAND AND O.F.S. MARCH QUARTERLY RESULTS

Most interest in the quarterly report of the South African gold mining companies for March was concentrated on Rand uranium production and operations on the Orange Free State mines. Satisfactory progress was made by these latter but some disappointment was manifest at uranium output results, especially those of West Rand Consolidated.

Lower profits for the quarter were announced by the majority of the producers but a higher premium gold revenue was obtained by most of the mines. This no doubt arose from the outbursts of activity and rising prices in the unofficial gold market during the early weeks of the year. There has been a reaction since.

A number of mines did a lower footage of development but payability and values were satisfactory; on certain mines the pay ratio and grade were better than those reported in the December quarter.

ORANGE FREE STATE OPERATING MINES

Mining work on the properties under the aegis of the Anglo American Corporation gave some interesting results.

President Steyn announced good developments on both the Basal and "A" reefs. Only a small footage was done on the latter, but of 515 ft. sampled, 92 per cent was payable averaging 10.35 dwt. gold per ton over a reef width of 62.24 in., equivalent to 644 in. dwt. These results raise hopes that this horizon may be a valuable adjunct to the Basal. Footage sampled on that reef was 1,540 ft., of which 83 (79) per cent was payable with values averaging 73.51 dwt. over 5.4 in., equal to 397 in. dwt. compared with 372 in. the December quarter. The mine's reduction plant, which started the previous quarter, continued to operate for metallurgical and test purposes. A start has been made on its extension to 75,000 tons monthly.

No reef development took place at President Brand but cross-cutting in country rock towards the Basal Reef was started on three levels.

Welkom's development during the quarter was 15,281 ft. of which 3,305 ft. was sampled with 64 (61) per cent payable, value 376 against 348 in. dwt. No. 2 shaft was deepened and work was started on erection of the uranium plant.

At Western Holdings the reduction plant continued to operate for test purposes and production should start before the middle of the year. More development was accomplished and of the 3,880 ft. sampled, 91 (99) per cent proved payable, averaging 618 (638) in. dwt.

Free State Geduld announced that the No. 2 shaft had been dewatered to the 5,194 ft. level. It was anticipated that the concrete plug would be reached shortly and steps taken to ensure that the shaft is effectively sealed, after which development can proceed.

Lorraine reported the sinking of No. 1 shaft to final depth of 5,475 ft. Erection of the reduction plant was started.

Although results on the two Freddie mines were not so good as in the December quarter, they were, nevertheless, satisfactory. Each company stated that the footage achieved was affected by faulting encountered at both shafts. Payability at Freddie's North was 88 per cent and 72 per cent for the South. At the former the value averaged 17 dwt. gold per ton over a reef width of 21 in., equal to 357 in. dwt. against 411 in. dwt. That at the South mine averaged 11.2 dwt. over 31 in. or 347 in. dwt. compared with 450 in. dwt.

A lower footage was sampled on the Basal Reef by St. Helena (Union Corporation) in the March quarter, while payability and average value were reduced. Of the 7,015 ft. sampled, 41 per cent was payable averaging 10.3 dwt. gold over 27 in., equal to 278 in. dwt. The corresponding figures for previous quarter were 51 per cent and 293 in. dwt.

Lower reef payability and values from a reduced development footage, compared with the preceding three months, were announced by Virginia O.F.S. (Anglo Transvaal). Of 1,180 ft. sampled during the period, 36 per cent was payable averaging 7.25 dwt. over 32.4 in., equal to 235 in. dwt. The previous quarter payability was 43 per cent and value 317 in. dwt. No. 1 shaft at Merriespruit was reported to be down 3,771 ft. No development work was reported.

Harmony (Central Mining) announced the first development results. Of the 1,441 ft. done from the ventilation shaft, only

66 ft. were on reef. All of the 55 ft. sampled was payable, averaging 14.5 dwt. over 40 in., equal to 580 in. dwt. The No. 3 shaft reached a depth of 4,502 ft.; the Basal Reef is expected at about 4,910 ft.

Little of outstanding interest was announced by "Geoffries" (General Mining). Work was done during the quarter on Farm Rosedale 898 and drilling was reported to be in progress.

RAND PRODUCERS RESULTS

Central Mining—Rand Mines Group.—Only two mines of the Central Mining group accomplished a larger footage of development last quarter. Blyvoor's results continued to show high payability. Footage sampled was 3,580 against 3,620, the pay ratio being 91 compared with 89 and value 544 in. dwt. (647).

Development at Crown Mines included 1,980 ft. sampled on the Main Reef Leader in shaft pillar areas of which 1,840, equal to 93 per cent of that sampled, were payable averaging 25.4 dwt. over 32 in. or 784 in. dwt.

Consolidated Main Reef recovered from its earlier setback and payability was up to the average with grade higher than that reported for some time—274 in. dwt. Durban Deep also made a satisfactory showing. Of the 8,440 ft. sampled, 74 (against 63) per cent proved payable, with a value of 336 compared with 255 in. dwt. The company announced that it has applied for lease of the undermining rights over an area of approximately 750 claims adjoining the western portion of its southern boundary.

City Deep was one of the mines to do more development and sampling. Of the 8,500 ft. sampled, 29 (27) per cent proved payable but value was not so good—275 against 297 in. dwt.

There was little inspiring in East Rand Proprietary's results. The development footage of 10,819 went against 12,544 ft., and of the 3,020 (3,810) ft. sampled, 66 per cent, compared with 73, was payable, value dropping to 332 in. dwt.; the previous quarter it came out at 430 in. dwt.

A better pay ratio and higher value were recorded by Rose Deep but footage sampled was down—3,600 against 6,300 ft. Payability was 41 compared with 27 per cent and value 322 as against 291 in. dwt. Welgedacht's pay ratio was down as also that of Transvaal Gold.

Anglo American Corporation.—Good progress was reported by mines of the Anglo American Corporation both in connection with developments and uranium production.

Daggafontein Mines announced that the acid plant started production and the treatment of residue slime for the recovery of uranium began at the end of the quarter. Development took place on both the Main Reef Leader and Kimberley but pay ratio of the 6,810 ft. sampled on this latter dropped from 53 to 35 per cent and value from 531 to 349 in. dwt. Payability of the Main Reef Leader rose to 66 (54) per cent, value 333 in. dwt.

The pay ratio of the 4,960 ft. sampled of the Kimberley on East Daggafontein rose from 13 to 19 per cent but value was down at 206 (230) in. dwt. The Main Reef Leader pay ratio was 21 against 28 per cent, value being 223 compared with 216 in. dwt.

Less work was done on Brakpan and of the 10,035 ft. sampled 32 (35) per cent was payable, value being 594 (524) in. dwt. Springs Mines pay ratio came back to 34 (43) per cent but value was better at 466 in. dwt.

A bright note was struck by "Sallies" with the value of the 10,120 ft. sampled rising to 695 against 391 in. dwt.

Slightly less footage was sampled by Western Reefs—10,170, payability being 43 per cent and value 368 in. dwt. Of more importance in the mine's picture was the exposure of the Vaal Reef underground for the first time in its history. 235 ft. sampled gave 94 per cent payability averaging 87.42 dwt. over 5.05 in. (441 in. dwt.). This disclosure was obtained in a drive on the 59th level from the joint No. 3 sub-vertical shaft which is virtually on the boundary of the Vaal Reefs and Western Reefs properties.

Consolidated Gold Fields.—A somewhat lower footage of development was accomplished by the majority of the Gold Fields mines last quarter.

Further excellent results were announced by West Driefontein.

The footage accomplished expanded from 6,318 to 8,053 ft. and all the 3,810 ft. of reef sampled proved payable averaging 19.3 dwt. gold per ton over a stoping width of 45 in., equal to 869 in. dwt. In the December quarter, payability was also 100 per cent, average value being 779 in. dwt.

At Doornfontein, also in the Far Western Rand, the footage sampled from the Annan shaft area was less than in the previous quarter but 92 per cent was payable averaging 8.4 dwt. over 45 in., equal to 378 in. dwt. In the previous quarter payability was 90 per cent and average value 450 in. dwt.

No work was done on the Carbon Leader at Libanon. Footage was less and of the 4,890 ft. sampled, the pay ratio was 67 per cent (62), value being 353 as against 333 in. dwt.

Included in the footage advanced at Luipaards Vlei—20,110 ft.—was 7,518 ft. of development carried out to explore the Bird reefs. This work is being done in connection with the mine's uranium project. Payability of the 6,625 ft. sampled was about the same as previously, 60 per cent, and value 248 against 236 in. dwt.

More work was done at Simmer and Jack, and of the 5,930 ft. sampled 40 per cent proved payable, value being 361 (387) in. dwt. The companion mine, Robinson Deep did less development and sampling; while payability was down—43 against 51 per cent—and value 333 compared with 361 in. dwt.

Sub Nigel's payability of 32 per cent was the same as for the previous quarter with value of 345 (360) in. dwt. "Vogel's" pay ratio was down—48 against 52 per cent—but that of Vlakfontein was better and of the 6,290 ft. sampled, the pay percentage was 34 as against 31 and value 352 (340) in. dwt.

Venterspost did less development and sampling but both payability and value were better.

Union Corporation.—Less development was done by most of the members of the Union Corporation last quarter but results were satisfactory on the majority of the mines.

East Geduld opened up 1,463 ft. on the Main Reef and of the 790 ft. sampled, 61 per cent against 68 proved payable, value being slightly higher at 230 in. dwt. The Kimberley Reef opened up on the mine also gave a better value; of the 790 ft. sampled, 16 (against 14) per cent was payable, value 172 against 134 in. dwt.

The Black Reef on Geduld was developed and of the 3,290 ft. sampled, 25 (against 13) per cent was payable, value also being better at 200 (168) in. dwt.

The pay ratio of the 8,200 ft. sampled on Grootvlei was slightly better—44 compared with 43 per cent but value dropped to 181 as against 238 in. dwt.

More work was done by Marievale on the Kimberley Reef—3,231 ft. (2,563 ft.)—and of the 2,000 (1,400) ft. sampled 31 against 32 per cent was payable, value 194 compared with 293 in. dwt. Payability of the Main Reef was better—60 per cent against 52 per cent; value 316 (312) in. dwt. This pay percentage was the highest recorded for a long time.

On Van Dyk a lower footage was both developed and sampled. New ground opened up amounted to 10,827 as against 11,477 ft., and of the 6,175 (7,325) ft. sampled, only 28 per cent proved payable, value being 207 in. dwt. The previous quarter 40 per cent of the 7,325 ft. sampled was payable, value being 235 in. dwt. Of the footage sampled 2,170 ft. was in the

No. 5 shaft area of which the payable reef disclosures were 525 ft., value being 9.6 dwt. over 29 in.

"Johannes" Group.—Work on the old mines of Johannesburg Consolidated during the March quarter was below that of the December three months, although results were satisfactory.

A sharply reduced footage was recorded at East Champ d'Or, but that for the previous quarter was unusually high. 760 (2,990) ft. were sampled, payability being 70 as against 52 per cent and value 238 compared with 201 in. dwt.

Government Areas footage sampled was only 2,955 compared with 7,660; pay ratio rose to 59 (53) per cent and value came out at 221 (202) in. dwt.

A rather poor showing was made by Randfontein as regards developments, although both profit and premium gold sales were higher. Footage sampled was 5,600 (8,440), giving a pay percentage of 51 (45) and value of 288 as against 308 in. dwt. The company incurred no liability in respect of taxation; expenditure on capital account was £2,139 and that on the uranium plant, £370,579.

The pay ratio of New State Areas footage sampled of 1,224 (1,370) was 45 against 29, values being lower at 282 compared with 315 in. dwt. The mine made a working loss of £2,169 which, however, was met by £5,271 from sundry revenue in addition to £5,206 from premium gold sales.

Wit Gold sampled 720 ft., with 29 per cent payability and value 160 (191) in. dwt. Working loss of £11,985 was met to a great extent by sundry revenue and premium gold.

General Mining.—It had been hoped that with operations at West Rand Consolidated's uranium plant on a larger scale, the profit last quarter would have increased beyond the £138,304 announced. It compared with £124,707 previously reported after the plant had started up in September 1952. Footage sampled was 7,830 ft. of which 39 per cent proved payable, value being 316 in. dwt.

Anglo Transvaal.—Rand Leases reported that development gave payability of 54 per cent and average value of 261 in. dwt. This compared with 56 per cent and 239 in. dwt in the preceding three months.

The first quarterly report was made by Hartebeestfontein Gold. It officially confirmed that the sinking of two shafts had begun on this Lucas Block property in the Klerksdorp district on the Far Western Rand.

Strathmore.—There was further expansion in the total development at the Stilfontein Mine in the Klerksdorp district. The March quarterly showed that footage sampled on the Vaal Reef was lower at 4,280 ft. payability being 75.7 per cent (80.3). On the other hand values continued to improve and averaged 312 in. dwt. against 278 in. dwt. Ore reserve estimate was given as 1,253,000 tons of 7.3 dwt.

At Ellaton Gold, which is also to exploit the Vaal Reef in the Klerksdorp district, the main vertical shaft was sunk 536 ft. to a depth of 1,104 ft. No fresh development results were announced in the March quarter. The Vaal Reef was intersected in the main shaft in January at 770 ft., averaging 686 in. dwt., and underground connection between the two shafts was effected in February.

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COMPANY NEWS AND VIEWS

East Champ d'Or's Limited Mining Area

Owing to shortage of native labour, the tonnage milled by East Champ d'Or last year was below the capacity of the plant. At 356,000 tons it showed a decrease of 32,000 tons on that for 1951, and although there was a slight up-grading of the ore—3.09 dwt.—the total gold recovery of 55,029 oz. was 3,377 oz. lower. Working costs rose by 2s. 4d. to 3s. 2d., accounted for by increased sorting and also influenced by the larger footage of work done. Profit from gold mining amounted to £97,334, compared with £128,407 the previous year, which was added to by £35,200 received in respect of gold sold at enhanced prices, but last year only £17,517 was received from this source. The dividend was scaled down to 7½d. against 9d. for each of the previous two years, absorbing £64,968. The balance carried forward is £100,544 against £92,782 brought in.

Of the larger footage accomplished—6,037 ft. compared with 4,283 ft.—2,990 ft. were sampled, of which 52.17 per cent proved payable. This was below that for 1951, while the value of 5.9 dwt. went against 14.6 dwt. The number of blocks of ore available for mining is now limited, and it has not been possible sufficiently to raise the grade sent to the mill to compensate for the reduction in scale of operations. During the year 401,091 tons of rock were mined, of which a large tonnage, as in 1951, were taken from blocks included in the ore reserves. These have consequently decreased and now stand at only 229,000 tons of 3.3 dwt. This is equivalent to about six months' supply for the mill on its normal capacity of 35,000 tons a month.

Government Areas and the Kimberley Reef

It has been pointed out that development of the Kimberley Reef on Government Areas is being carried out in those portions of the mine that have given the most favourable indications. This policy was continued during 1952 and the company's annual report announces that 5,531 ft. of development was done on the Kimberley horizon. Of the 5,485 ft. sampled, 57.79 per cent proved payable averaging 5.7 dwt. The total footage accomplished on all the reefs—Contact, Leader, Black and Kimberley, was 39,341 ft., a decrease of 13,706 ft. over that carried out in 1951. Both payability and value were higher—58.35 (56.41) per cent, averaging 4.9 (4.8) dwt., the channel width being rather narrower. Since the inception of the programme to open up the Kimberley Reef, primary development to the extent of 129,125 ft. has been accomplished, and in the ore reserve figure of 7,528,000 tons of 2.9 dwt., there are 759,000 tons on the Kimberley Reef, valued at 3.5 dwt.

In addition to the footage of work mentioned above, secondary development which has been carried out for several years, was continued and during 1952 a total of 39,665 ft. were accomplished which was rather more than during the preceding year.

The mill throughput was also in advance of that for 1951. Tonnage dealt with was 2,943,000 tons—an increase of 177,000 tons. Grade was slightly lower, 2.63 dwt. but fine gold produced of 387,701 oz. was 9,988 oz. more. Costs were 8d. per ton lower at 2s. 2d. Profit, excluding £120,581 received in respect of gold sold above standard price, amounted to £607,626 compared with £639,414. The dividend paid of 2s. went against 2s. 1½d. the previous year and absorbed £560,000. The balance unappropriated amounted to £667,717 against £606,594 brought in.

A pyrite recovery plant is being erected on the mine and it is anticipated that it will be in operation early in 1954.

Randfontein and Uranium

The Randfontein is particularly identified with the future of uranium in South Africa by reason of the fact that, as the biggest ore miller of the Rand, it has been officially scheduled as a potential producer of the metal. Plant is being erected and the company's 1952 annual report recites the progress made. It confirms that operations are estimated to start during 1954 and that in addition to the arrangements made in respect

of uranium, a plant is to be erected to produce sulphuric acid for use in connection with the production of uranium.

Following the decision in connection with this matter, it was decided that a certain proportion of the tonnage mined and treated from other reefs on the property would be substituted by an equivalent tonnage to be mined from the Bird Reef series. This underlies the property and is known to be one of the chief uranium carriers. Consequently, development on the horizon has been proceeding and the footage last year amounted to 34,341 ft. In addition to this, work carried out on other reefs amounted to 81,629 ft. as compared with 104,188 ft. accomplished in 1951. 37,170 ft. were sampled of which 37.80 per cent proved payable averaging 7.2 dwt. Ore reserves were down at the end of the year to 3,580,000 tons (4,090,000) value being the same, 3 dwt.

The mill dealt with a larger quantity of ore—4,127,000 as against 4,097,000 tons but there was a slight drop in recovery, 2.39 dwt. Costs rose by 7d. per ton to 2s. 6d., and the profit, excluding sums totalling £154,225 received from gold premium sales, amounted to £319,283 as against £463,180 in 1951. The dividend was lowered to 1s. 9d. (against 2s. 3d.) and absorbed £355,561. There was a big reduction in taxation, the amount called for being £2,960 as against £184,136. After making necessary appropriations, the balance carried forward was £927,036 as against £743,371 brought in.

Progressive Work at Freddie's North

The record of operations at Freddie's North contained in the company's 1952 annual report, confirms the good impression created by the company's quarterly statements.

During the year the erection of the reduction plant, with a designed capacity of 50,000 tons per month, was completed, except for minor items. Mechanical and metallurgical tests on development rock were conducted with satisfactory results. The second air drill compressor for use of both the company and Freddie's South was installed, while mine store, explosive magazines and other surface works were finished and equipped. On the completion of shaft sinking, the cutting of underground stations and excavations took place, while permanent skips, cages and shaft columns were completed at both shafts. No. 1 shaft attained a final depth of 5,973 ft. and No. 2, 5,503 ft. respectively.

Development footage accomplished during the year amounted to 19,045 ft. Of the 1,230 ft. sampled, 98.37 per cent proved payable and averaged 16.6 dwt. over 27 in., equal to 448 in. dwt. Work has disclosed that it is probable that the Basal Reef will, over the area of the mine so far explored, be overlain by measures referred to locally as the "khaki shale." This varies in thickness from a few inches up to 10 ft., and owing to its friable nature, where necessary, special measures for the control of stoping widths will be taken, and it is intended to carry out a resue method of stoping. This may tend to increase mining costs which should be more than offset by the greater proportion of gold extracted from the ore crushed.

The accounts show net expenditure in excess of capital raised of £2,076,583, comprising loans and accrued interest of £2,010,685; sundry loan stockholders, interest unclaimed and unpaid £30,515; provision for taxation £7,997, and sundry creditors and provisions £195,217, less sundry debtors and payments in advance £33,968 and cash £133,863.

Freddie's South Results

Operations on the property of Freddie's South during 1952 were very similar to those of the northern neighbour. The plant was completed, two shafts reached their final depths and most of the surface construction programme completed.

The plant has a designed capacity of 50,000 tons per month and after its completion towards the end of the year, small quantities of development rock were milled. The mechanical and metallurgical tests, which were conducted, proved to be satisfactory. Mine store, explosive magazines, timber treatment plant and the surface construction programme was completed except for minor items.

No 1 shaft reached its final depth of 5,186 ft. and No. 2, 5,778 ft. Permanent skips, cages and shaft columns were completed and all the permanent winders were commissioned.

The development footage accomplished during the year amounted to 18,041 ft. Of the 1,625 ft. sampled, 99.39 per cent proved payable and averaged 14.2 dwt. over a channel width of 31 in., equivalent to 440 in. dwt. The development accomplished disclosed that it is probable that the Basal Reef will, over the area so far explored, be overlain, as in Freddie's North, by measures referred to locally as the "khaki shale." This varies in thickness from a few inches up to 10 ft. Where it is not possible to support this overlying strata and where the thickness of the shale is such that special measures for the control of stoping widths are necessary, it is intended to carry out a rescue method of stoping. It is not anticipated that any material difficulties will arise.

The 1952 accounts show net expenditure in excess of capital raised of £2,101,323, comprising loans and accrued interest £2,010,685, sundry loan stockholders, interest unclaimed and unpaid £30,736; provision for taxation £7,679 and sundry creditors and provisions £437,579, less sundry debtors and payments in advance £209,615 and cash £175,741.

Durban Deep and the Kimberley Reef

Although the 1952 annual report of Durban Deep does not emphasize the benefits of the big capital expenditure made over a period of many years, there is no doubt that eventually advantages will be seen with a well-laid-out mine.

Shortage of power and labour affected operations last year and in conformity with the rest of the mining industry, working costs continued their upward trend. Some improvement was seen in overall developments and work on the Kimberley Reef gave encouraging results. It is intended to expand the scale of operations on this horizon, which should have a beneficial effect on working costs though it may lead to a slight reduction in grade.

The mill dealt with 18,000 tons more ore at 2,168,000 and although yield was slightly down, gold recovery of 372,333 oz. was slightly better. Revenue per ton was 1s. lower at 44s. Od. and this with a rise of 1s. 10d. in costs, resulted in working profit per ton decreasing by 2s. 10d., the total showing a drop of £298,583 at £1,130,101. Taxation was lower at £296,696 (£456,801) but capital expenditure called for £363,590 compared with £234,162. It was consequently necessary to lower the dividend from 5s. to 4s. 6d., which absorbed £523,125, and the balance carried forward amounted to £799,807 compared with £867,085 brought in.

A larger footage of work was done—81,240 (79,921 ft.) and the pay percentage of the 46,380 ft. sampled was 65.2, value 7.9 dwt. Five reefs were worked—Main, Leader, South, Bird and Kimberley. The channel width of this latter dropped from 50 to 40 ins. but the in.-dwt. value and payability were practically unaltered. A big decline in ore reserves is shown; the available tonnage of 7,988,000 being 560,000 tons less than in the previous year, due to the new pay limit dictated by the higher working costs. There is an additional tonnage of 827,000 in shaft and safety pillars.

Nigel Gold to Prospect for Uranium

The recent announcement by Nigel Gold Mining that the company had been authorized to prospect for uranium, is confirmed in the annual report. Little, however, beyond this is vouchsafed excepting that the Board stresses the vital necessity of conserving funds for the exploration of the Kimberley Reef. This, in the Eastern Rand, where the property is situated, is the chief uranium carrier. Work on the horizon as also on the Nigel reef horizon continued to show promise during 1952, particularly in the ground taken over from New Nigel Estate. Development amounted to 27,367 ft.—most of it on the Kimberley—and of the 21,235 ft. sampled, 36.21 proved payable, average value being 8.68 dwt. In his statement accompanying the Report, the chairman says that development will be improved upon during the current year. If this proves to be so, ore reserves may be further increased; at the end of December last they amounted to 402,255 tons of 4.60 dwt. as against 367,080 tons the previous year, with value about the same.

Ore milled last year amounted to 405,000 tons, yield being 2,808 dwt. and recovery 56,863 oz. Costs rose from 33s. 6d. to 35s. 3d. and working profit decreased from 1s. 8d. to 9.9d. per ton. Total working profit came out at £16,863 as against

£36,165, the previous year, and an amount of £18,116 was received from gold sold at enhanced price. Sundry revenue and profit on sale of investments brought in £22,264 against £16,792. After making necessary allocations and appropriating £110,000 for working capital and transferring £110,000 to abnormal costs reserve, the forward balance is £6,739 against £161,989 brought in. No dividend was paid and the company was not liable for any tax.

T.C.L.'s Higher Income

Functioning in a somewhat unobtrusive manner, Transvaal Consolidated Land & Exploration, is one of the old members of the Central Mining group. It has taken an interest in various undertakings and although the main source of its income is from Van Dyks Drift Colliery, it derives revenue from Mineral Royalties and from a selective portfolio of investments. These consist of shares principally in Rand producing mines and O.F.S. undertakings. They have a book value of £393,905 with a Market value largely in excess of this. Income from these investments including Mortgage Bond last year brought in £51,161, while £89,552 was derived from Mineral Royalties, principally from the working of asbestos, chrome and tin deposits. Farming and township rents brought in £2,131 and £850 was derived by way of sundry revenue. The biggest item of income was £99,925 derived from the Colliery interest. Altogether the total revenue amounted to £243,619 against £209,685 previously, and after meeting expenses the realized profit for 1952 was £185,108.

Taxation called for a larger amount, £46,174 (£7,582) and the maintained dividend of 1s. 9d. absorbed £81,396; the forward balance of £400,764 compared with £343,265 brought in.

The quality of coal produced from the Van Dyks Drift Colliery was good and mining conditions were normal; total production was 557,849 tons against 561,492, the decrease being entirely due to shortage of railway trucks. The installation of additional screens, coal bins and adjustment to crusher resulted in an increase of available tonnage of small coal. Face room and equipment underground are adequate to meet any likely increased demand. The Government's embargo on export of coal last year restricted the tonnage available for shipment.

Marlu's Outlook Much Brighter

Marlu Gold Mining Areas during the year to September 30 last, was able to announce a big improvement in results, compared with the previous financial year. Total tonnage milled at 477,420 tons, which included 14,770 tons of underground ore, showed an increase of 6,240 tons over the previous year and, as this was of a slightly higher grade, gold production rose to 45,751 oz. against 42,547 oz.

Year to Bullion*	Gross Revenue	Mining Revenue	Other Costs	Costs	Net Profit	Carry Forward
Sept. 30	£	£	£	£	£	£
1952	594,691	595,387	485,158	62,218	48,011	57,425†
1951	525,316	525,316	445,259	47,563	32,494	5,503‡

* Net proceeds

† Including a refund of export duty on gold premium in respect of previous years of £3,911.

‡ Including over provision for taxation in respect of previous years of £197.

The sale of the total output on the free market as from May, 1952, raised the revenue received per oz. with the result that bullion revenue showed an advance of approximately £70,000. Approximately half the increase in bullion revenue per ton was offset by the rise in costs. But an exact comparison of costs between the last two financial years is not possible, because underground sulphide ore was being produced during part of 1951-52 whereas the whole of the 1950-51 output was from the oxidized zone at present being worked by mechanical shovels. During the year under review the miners received an award of higher wages following the publication of the Lidbury Commission Report on Wage Demands, but the effects of this increase were reduced by a contraction in the labour force.

Capital expenditure has been on a diminishing scale and in the September quarter 1952 was only £2,312. Even this modest sum was cut down to £481 in the December quarter and reduced to nil during the first quarter of 1953.

Thus, if the experience of the year under review could be repeated in the current financial year without the capital expenditure, a modest dividend could be paid on the £2,000,000

capital. And if the setback suffered because of high rainfall in May and June, 1952, can be avoided, the prospects of a resumption of dividends after 13 years will be much brighter.

Higher working costs caused a revision of the reserves in 1951. At September 30, 1952, they were 1,092,000 tons of an average value of 2.68 dwt. per ton of oxidized ore and 481,500 tons averaging 7.3 dwt. per ton in the sulphide zone.

In his review to members for the accounting year to September 30, 1952, the chairman stated that the operating profit for the first half of the current year is approximately £20,000 up on the corresponding period of the previous year and the prospect of a resumption of dividends is a great deal brighter.

Rand and O.F.S. Mine Returns For April

The Rand and O.F.S. Mine returns for April call for little comment. Working profits of most companies were lower than in March. There were, however, about a dozen companies which managed to return higher profit figures, of which the most outstanding were Stilfontein, West Driefontein, Daggafontein, Vogels and St. Helena.

The gold price on which the April returns were based was 246s. 10d. per oz., the same as in the previous month.

New Kleinfontein's results which show a fall of £4,000 to £26,000 were affected by an underground fire on April 7. This fire was extinguished on the same day.

Operations at Venterspost were also affected by a breakdown of the 8-ton hoist at the No. 2 sub-incline shaft.

Company	April, 1953				Current Financial Year				Last Financial Year			
	Tons (000)	Yield (oz.)	Profit (£000)	Yield ends	Tons (000)	Yield (oz.)	Profit (£000)	Yield ends	Tons (000)	Yield (oz.)	Profit (£000)	Yield ends
Gold Fields												
Libanon	85	16,935	42.6	J	823	164,539	418	795	150,574	362		
Lupgraads Viei	108	20,011	46.3	J	1019	191,712	485	987	183,497	518		
Rietfontein	26	5,940	25.2	D	104	23,341	101	107	23,697	110		
Robbeneiland	96	19,004	14.3	J	382	72,570	51	437	70,683	35		
Simmer J.	126	19,681	69.9	J	488	78,587	54	489	77,799	66		
Sub Nigal	66	22,770	111.4	J	658	227,720	1,142	66	231,378	1,262		
Venterspost	102	24,098	61.3	J	1015	237,015	610	980	215,649	613		
Vlakfontein	36	13,231	69.9	J	143	52,75	281	145	54,108	309		
Vogels	97	24,493	98.5	D	373	94,486	176	310	80,243	306		
West Drie	40	28,304	227.1	J	303	204,425	1,575	65	23,193	71		
Anglo-American												
Brakpan	117	20,957	23.2	D	453	81,015	80	452	83,668	154		
Daggafontein	223	52,632	343.1	D	879	207,884	1,362	921	220,187	1,566		
E. Daggafontein	92	16,108	50.0	D	352	61,764	194	383	68,801	265		
S. A. Lands	101	18,388	50.9	D	400	72,717	210	441	79,700	296		
Spring Mines	120	20,943	10.9	D	595	82,211	49	650	85,206	71		
Welkom	63	12,284	17.0	D	230	45,116	58	167	44,353	L 101		
Western Reefs	107	21,982	77.3	D	425	87,671	324	435	91,668	413		
Central Mining												
Blyvoor	97	57,721	466.8	J	1021	615,332	5,206	1079	685,039	6,147		
City Deep	154	29,635	21.2	D	626	121,245	98	612	121,988	107		
Consol. M.R.	166	22,990	15.1	J	1764	246,493	233	1896	259,597	424		
Crown	263	42,500	38.4	D	1039	167,740	151	1044	171,545	129		
D. Roodepoort	173	30,057	69.9	J	710	122,360	316	700	120,510	317		
East Rand P.	184	40,001	101.2	D	729	159,355	396	818	178,158	635		
Modder B.	52	5,795	1.0	J	211	23,305	9	226	24,827	29		
Modder E.	112	12,841	17.1	J	1149	132,654	205	173	137,875	300		
Rose Deep	73	10,766	8.0	D	288	42,523	25	329	45,977	46		
Welgedacht	33	4,188	4.2	J	336	41,671	44	337	39,697	41		
J.C.I.												
East Champ	24	3,930	1.0	D	100	16,366	12	123	19,083	34		
Govt. G.M.A.	236	34,400	60.0	D	962	132,551	240	900	129,012	197		
New State	30	4,510	1.0	J	136	20,330	4	175	26,417	4		
Randfontein	300	39,100	30.2	D	1220	158,495	121	1384	167,736	115		
Wit Gold	57	6,420	L 8.9	D	227	26,184	L 15	235	27,959	10		
Union												
East Geduld	134	40,198	298.9	D	534	160,192	1,186	574	172,218	1,360		
Geduld Prop.	91	14,583	31.4	J	384	60,023	129	416	60,356	149		
Grootvlei	185	39,304	233.2	D	730	156,193	932	768	166,535	1,064		
Mariveale	63	15,437	67.4	D	241	59,525	263	239	59,840	280		
St. Helena	63	12,475	19.3	D	244	48,538	69	175	34,251	9		
Van Dyk	89	14,674	5.7	D	363	58,799	23	423	61,477	49		
General Mining												
S. Roodepoort	26	5,940	22.9	J	269	61,401	231	270	60,423	225		
W. Rand Con.	220	30,800	85.6	D	892	125,795	385	819	127,851	470		
Anglo-Transvaal												
N. Klerksdorp	10	1,432	0.9	J	41	5,558	4	43	4,885	4		
Rand Leases	160	27,860	25.2	J	1719	291,723	451	1840	308,973	799		
Village M.R.	34	5,325	13.0	J	338	52,917	142	341	52,993	174		
Others												
N. Kleinfontein	103	13,463	26.0	D	421	54,621	L 13	412	54,324	423		
Sparwater	10	2,370	L 3.3	D	41	9,434	L 13	41	9,306	L 12		
Stilfontein	64	18,366	90.0	D	238	64,573	296	329	64,573	—		
W. Nigel	17	—	7.6	J	168	—	76	104	—	3		

*Notes.—*Profit figures are in all cases figures of working profit excluding profit from sale of gold at premium prices. In case of groups marked with an asterisk (*) profit includes sundry revenue. Profit figures preceded by L indicate a loss.

Company Shorts

The British Electrical Power Convention will be held at Torbay from June 8 to June 12. Papers presented at the convention will emphasize the ways in which electricity can assist to speed production.

Camborne School of Mines: Students' Annual Dinner.—The Camborne School of Mines will hold their Students' Annual Dinner at Tonkin's Restaurant, Camborne, on Friday, June 12, at 7.30 p.m. for 8 p.m. Application for tickets should be made to The Secretary, School of Mines, Camborne. Dress: Lounge Suit.

British Borneo Petroleum Earns More, Pays More.—The preliminary profits statement of British Borneo Petroleum Syndicate dealing with the financial results for the year to March 31, last, showed that profits before tax expanded by some £5,000 and the dividend on the 6s. stock units was raised 1d. to 1s. 2d. free of tax.

Year to Mar. 31	Working Profit £	Taxation £	Net Profit £	Divid. per s. d.	To Reserve £	Carry Fwd. £
1953	280,270	174,000	106,270	1 2	45,000	41,651
1952	275,056	175,000	100,056	1 1	44,998	38,714

* Free of Tax.
† Allocated as between £15,000 (same) to investment reserve and £30,000 (£29,998) to general reserve.

The report and accounts will be issued on May 18, and the annual general meeting will be held on June 10.

Petaling's Negotiations For New Reserve Lands.—Petaling Tin have announced that negotiations are well advanced for the purchase from an estate in the vicinity of the company's property of approximately 550 acres, known to contain deposits of tin ore. Arrangements, the announcement stated, may not be completed for some months. But a further announcement which will include a statement of the revised life of the property, will be made so soon as a final agreement is reached.

Daggafontein's Uranium Plant To Open On May 22.—The second uranium plant to come into production in South Africa will be the Daggafontein Plant which will be opened officially on May 22. The Anglo American Corporation of South Africa in their announcement stated that Daggafontein's uranium plant is considerably larger than the first plant at West Rand Consolidated and that two further large plants at Blyvooruitzicht and Western Reefs will soon be in operation.

Through the co-operation of the British Atomic Energy Authorities, the British Broadcasting Corporation and the South African Broadcasting Corporation, the ceremony will be broadcast nationally both here and in South Africa. Mr. Duncan Sandys, Minister of Supply, will speak from Harwell, and Sir Ernest Oppenheimer, Chairman of Anglo American Corporation of South Africa Limited, will reply from Daggafontein.

Tharsis Sulphur Maintains Dividend.—The report and accounts of The Tharsis Sulphur and Copper Co. for the calendar year 1952 showed that net profit, after providing for all charges including taxation liabilities of £434,959 (£161,996), was £223,076 compared with £192,332. The dividend was maintained at 12½ per cent per £2 share on the £1,250,000 issued capital and required £85,937. The sum of £100,000 (£100,000) was allocated to plant replacement reserve leaving the carry forward stronger at £230,928 compared with £193,789 brought in.

Oceana Development Again Pays 10 Per Cent.—The net profit of the Oceana Development Company for the year ended December 31, 1952, amounted to £6,577 (£9,604), after providing for all charges including tax liabilities of £5,500 against £8,000. The dividend was maintained at 10 per cent per 5s. stock unit which required £7,250 leaving the forward balance at the fiscal year end at £8,296 compared with £9,628 brought in.

The explanation for the profit reduction lies in the item "profit on realization of investments" which for 1952 fell to £3,780 compared with £8,879. Mr. Reginald C. Bromhead is Chairman. Meeting, London, May 19.

Golden Horse Shoe Earns More But Pays Same.—The net profit of The Golden Horse Shoe (New) Ltd. for the calendar year 1952 after providing for all expenses including taxation liabilities of £14,668 (£6,750) was £7,098 compared with £5,676. The dividend of 8½ per cent equivalent to 2d. per 2/- stock unit on the 110,000 issued capital required £5,042. The sum of £1,500 was used to write down investments and the carry forward at the financial year end was £3,259 compared with £1,250 brought in. Mr. R. Ellerton Binns is chairman. Meeting, London, May 29.

ADVERTISER wishes to invest \$2,000,000 on a long term basis in a suitable mining or affiliated enterprise possessing good prospects. Box 534.

THE STRAITS TRADING CO. LTD.

At the Annual General Meeting of the Straits Trading Co. Ltd., held in Singapore on May 6, 1953, the Chairman, The Hon. Mr. E. M. F. Fergusson, who presided, said:—

The Report and Accounts for the year ended December 31, 1952, having been in your hands for the prescribed time I shall, with your permission, take them as read.

There was little change in the total quantity of ore available to the Malayan smelters during the year, the quantity of about 85,000 tons being much the same as it was during the past few years. Only 8,000 tons came from overseas, the reduction again being due to exchange factors. The Malayan output at 77,000 tons was practically the same as for the previous two years, and normally this production could be expected to be maintained for 1953 if the incentive conditions which ruled during the past two years were to continue. There is some evidence, however, that the recent substantial drop in the price is already affecting the production from Chinese mines, and information has reached us of mines having closed down.

Thanks to the able and determined efforts of Sir Gerald Tempier and the inspiration he has been to all, the security position has improved. It would be a pity if the relief from the tension of the past few years was not to be enjoyed to the full because of adverse economic conditions due to the recent heavy recession in the prices of rubber and tin.

ERA OF MAXIMUM PRODUCTION

In regard to the world supply of tin, prices during a considerable part of the years since 1949 have provided an attractive incentive to most producers, but in spite of this, the remarkable lack of significant variation in the total supplies available to the world is confirmation, if any were needed, that an all-out effort has been made to supply both the world's consumptive demand and the strategic stockpiling of the U.S.A. During this period no new fields have been discovered, and it remains true that more tin is being taken out than is being replaced by prospecting and development. The grade of ground goes steadily down and yearly it becomes more difficult to marry the complicated and expensive plant required to work low grade deposits to a sufficiently large volume of ground to justify the large capital investment which is entailed. In this connection it should be remembered that costs of all mining equipment are many times higher than before the war, and there is no evidence yet of a downward trend in prices; in fact, there is the opposite, and percentage additions are still being made by manufacturers overseas to cover the costs of increased labour charges. Labour throughout the world is probably the largest component in the cost of everything we use, whether grown, mined or manufactured, and with such an inelastic element it does not seem that costs can rapidly be reduced.

WORLD PRODUCTION AND CONSUMPTION

There is little that one can add in amplification of the supply position which has not been said many times already—the total production is from 160,000 to 165,000 tons of metal per year. In regard to demand there are numerous estimates, but I have not yet been convinced that any estimates which show a smaller average consumption than from 140,000 to 145,000 tons per annum are justified. During recent years the U.S.A. stockpiling policy has taken up the difference between supply and consumer demand, and that country has apparently only been able to approach its stockpiling goal by a most drastic domestic curtailment in the use of tin and by the assumption of monopoly powers over the importation and sale of the metal. In the latter part of last year the controls were removed, and there is now no restriction in the U.S.A. It is early yet to say what effect this will have on consumption but, short of a drastic fall in industrial activity, it might reasonably be expected that demand will once more return to normal. The United States has let it be known that its stockpiling policy is nearing its end, and it may be that this information had much to do with the recent heavy recession in the price. There do not seem to be any real grounds for thinking that armament and defence schemes are over or that peace, goodwill and harmony with the Communists are around the corner. In fact, the situation in Indo China causes considerable disquiet to this part of the world and could be even more far-reaching in its effects than the war in Korea.

In producing countries other than Malaya it would seem that a continuance of the recent downward movement of prices would also have the inevitable results of causing some decrease in production. Perhaps because of this, and a precarious margin between cost and selling price which existed for many producers, the balance between supply and demand will come sooner than might be expected, bearing in mind the general evidence that the production centres of the world have been hard pressed to maintain the quantities of recent years.

Two years ago when I addressed you, I said that a margin of

10 per cent of production over average demand was little enough in any industry, and this is especially so in the case of the tin industry as the long term trend seems to be for production to drop from natural causes. If what I said then is still a reasonable picture of the present position, it may also be taken to represent the general background to the Working Party on Tin which will meet in Europe next month. The purpose of the meeting is reported in the Press as being "to consider the Paris draft of the International Tin Agreement with other proposals discussed at the inconclusive U.N. Geneva Conference on Tin in 1950, together with any other variant for stabilizing and/or regularizing tin." If the Working Party is of the opinion that conditions exist for a resumption of the U.N. Conference, then it will so report to the Chairman of the Steering Committee.

INTERNATIONAL RESTRICTION NOT REQUIRED

An international tin agreement operated before the war, but there are wide differences between the pre-war conditions and the present ones. The late 1920's saw a vast influx of new capital investment to the mining industry, but no sooner had it taken place than the catastrophic slump of the early 1930's occurred. Excluding China, the productive capacity was then some 220,000 tons of tin per year, and thus some 60,000 tons per year greater than it is now. The position which producing countries face to-day is, therefore, much less severe than that which confronted them twenty years ago. For the size of the problem, the laborious processes of international conferences and international action may be too tardy to be effective, especially when the subsequent detailed administrative action which would be required in the different countries is taken into account. It is, therefore, very difficult to be specific about possible international means of controlling a position which may itself be corrected by the lapse of time and the normal market forces. It may well be that the recent drop in the tin price will prove to be the exercise which our American friends have been seeking so that they can find out the lowest price at which the world will produce 140,000 tons of suitable quality metal, but that might quite easily not be the price that will encourage exploration and development. Generally speaking, the long term outlook appears to give little reason for disquiet, so long as the world's industrial activity is not curtailed by war or slump.

ACCOUNTS

Turning now to the accounts, the profit for the year shows a small reduction compared with the previous year. Continued good dividends from our sundry investments and also an initial payment from Pelam Estate have helped us, despite increased costs, to approximate the previous figures. We have again considered it prudent to recommend a transfer to investment reserve which will then stand at \$2,000,000. Costs of treatment of tin ore have again risen considerably, but this was to some extent offset by an increase in our smelting charge. In the balance sheet, issued capital and general reserve remain unchanged, while investment reserve reflects the appropriation sanctioned at the last meeting. The new item of war damage compensation is the 70 per cent dividend paid against the award for the loss of insured tin and tin bearing materials which I informed you in my address a year ago had been received. Sundry creditors and credit balances show a reduction from the previous year, but this calls for no comment as this item normally varies substantially from time to time. The bank overdraft is practically unchanged, though it will be noticed that both tin ore and fuel and stores stocks required more finance than the previous year.

On the assets side, works, land, buildings and furniture reflect the cost of continued reconstruction work at Butterworth. Considerable sums still require to be expended there, but the finance required will be within the resources of the company, especially when war damage compensation which we expect to receive is taken into account. The destruction we suffered at both Butterworth and Singapore was very severe, and the assessment of our claim is highly complicated. Every endeavour will be made during the present year to reach a satisfactory settlement of this complex problem with the War Damage Commission, and conversations have been proceeding regarding ways and means towards this end. Pulau Brani leases call for no comment, and they have been written down at the usual rate against their expiry.

SUBSIDIARY INTERESTS

Investments in subsidiary companies are practically unchanged, but further advances have been made to the mining subsidiaries to finance works of a capital nature. A considerable portion of the amount shown as advances is liquid, and, of course, we also derive benefit from the amounts which are shown as due to subsidiaries. The item sundry investments shows an increase but continues to appear at substantially below the market value. During the year it was necessary for the interested parties to provide the Singapore Plywood Com-

pany with further finance, and more will be required this year. Results during last year were a great disappointment and fell short of expectations, and, while the factory is now capable of producing satisfactory quantities of good quality wood, much still requires to be done before this new Malayan industry can be said to be fully established. It has the advantage of being based on local raw materials in the form of Malayan and Borneo timbers, and in course of time, and as the local staff gain in training and experience, it should be possible to overcome the technical difficulties associated with a new industry.

Tin and tin ore in stock and in transit, and fuel and stores stocks, while showing increases when compared with the previous year, continue to be conservatively valued. Sundry debtors is a sound item and calls for no comment.

In regard to the British Tin Smelting Co. Ltd., it was found prudent, shortly after I addressed you last year, to write down the value of certain materials which were in stock and which had been found difficult to treat. This, in conjunction with a fall in certain metal prices, meant that a loss was recorded. The results for the current year, so far as can be judged at present by the management in England, will show a profit.

Pelam Estate again had a prosperous year and I need add little to my previously expressed opinion that we have one of the most efficient and compact up-to-date estates in the country, in addition to which it is one of the largest individual producers in Malaya. We are anxious to maintain this satisfactory state of affairs, but the present high cost of replanting is a factor which cannot be ignored. It seems clear that for large scale replanting in Malaya to continue, there must be lower costs, the discovery of new and cheaper methods of planting, or a higher average price than that ruling at present.

With respect to our mining properties, a small working profit was made by the dredge operating in Pahang, but the results were not so good as we had hoped for, increased costs and the continuance of "teething" troubles with the plant being responsible. Every effort is being made to overcome them this year, but at present prices many small dredging concerns are likely to find profitable operation difficult. Other areas, both in Malaya and Siam, continue to be worked in conjunction with others, with profitable results.

INTERESTS IN SIAM

The indications that the ore extracted from the Laboo lodes in South Siam is amenable to treatment when worked on a large scale, were confirmed during the year. Sufficient data were obtained from the pilot mill operations to enable specifications for a large scale milling and concentrating plant to be prepared, and tenders for the work are now under examination. Work has continued on the extension of the main power station and mine buildings, and the programme of underground development is being pressed forward. If all goes well, our technical advisers are confident that this mine will prove to be a substantial producer.

NEW PRODUCER PROSPECTS

The question of bringing other mining areas into production is one which received a considerable amount of attention during the year, and I have good hopes that the efforts made will shortly bear fruit. Progress with the war damage claim of the Malayan subsidiary reached an advanced stage at the end of the year, and it is hoped that dividends ultimately received on the awards in this highly complex claim will go some way towards meeting the war losses sustained. In East Africa progress has been made with the equipping of the Kyerwa Mine, but plant deliveries have been much slower than anticipated. I visited the mine at the end of last year and found the management confident that the plant extensions would be fully justified.

To our employees on the rubber estate and the mines, we tender our thanks for their attention to duty. It is our earnest hope that the improvement in the emergency situation will continue and that the strain under which they have laboured in recent years will soon be over.

As stated in my previous addresses to members, a portion of the profits out of which dividends are paid has suffered deduction of U.K. income tax at the standard rate. Shareholders resident in the United Kingdom will be pleased to know that agreement has now been reached with the Commissioners of Inland Revenue as to the appropriate fraction, and relief to members who are chargeable to U.K. income tax has now been authorized in respect of dividends paid in 1950, 1951 and 1952. A circular letter on the subject is in course of preparation and will be sent to all members, together with the usual report of the proceedings at this meeting.

In conclusion I should like to pay our customary tribute to the staff of the company throughout Malaya. They have given us their usual loyal and conscientious service, and I am sure you will wish me to record our gratitude to them.

The report and accounts were adopted.

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Published by The Mining Journal Ltd. 15 Wilson Street, Moorgate, London, E.C.2, and printed by Washburn & Sons Ltd., 25-27 Queen's Road, Southend-on-Sea, Essex. Registered as a Newspaper.

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